

INDEX OF SHEETS

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1	TITLE SHEET
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5	SIGNING AND MARKING PLAN
6	TRAFFIC CONTROL PLAN SHEET 1
7	TRAFFIC CONTROL PLAN SHEET 2
8	PROFILE AND CROSS SECTIONS

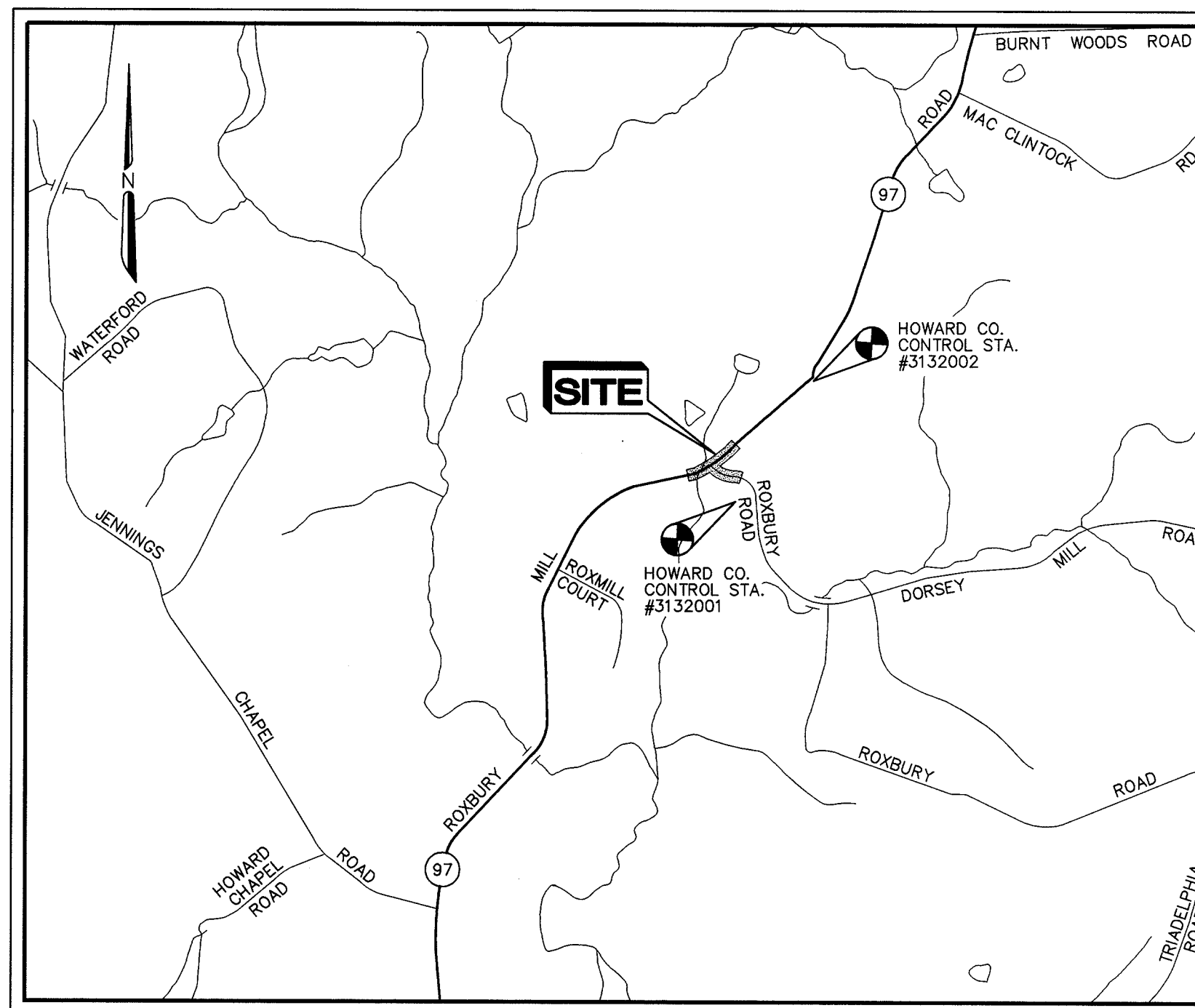
GENERAL NOTES

- ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE AS DIRECTED BY THE HOWARD COUNTY ENGINEER AND THE MDSA PERMIT DIRECTOR.
- ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED, BY CONTRACTOR.
- STORM DRAINAGE SLOPES ARE TO BE AS DIRECTED BY HOWARD COUNTY ENGINEER UNLESS OTHERWISE SHOWN ON PLANS.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

MISS UTILITY 1-800-257-7777
Baltimore Gas & Electric Company - Electric Distribution
MDSA INSPECTION DIVISION

THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:

- PROPOSED/EXISTING RIGHT-OF-WAY.
 - UTILITY RELOCATION.
 - MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
 - EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT
 - HORIZONTAL/VERTICAL SURVEY CONTROL.
- SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 & G-1.02 FOR STANDARD SYMBOLS.
 - COORDINATES BASED ON NAD '27 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 3132001 AND NO. 3132002.
- | | |
|---------|---------------|
| 3132001 | N, 521363.996 |
| | E, 788157.568 |
| | ELEV. 480.54 |
| 3132002 | N, 522316.687 |
| | E, 788449.553 |
| | ELEV. 476.65 |
- MAINTENANCE OF TRAFFIC ALONG MD 97 SHALL BE HANDLED BY SHA STANDARD MD-104.33-02 - WORK ZONE TRAFFIC CONTROL TYPICAL - SHOULDER WORK/2 LANE, 2 WAY. MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION ALONG ROXBURY ROAD SHALL BE HANDLED BY SHA STANDARD MD-104.33-00 - WORK ZONE TRAFFIC CONTROL TYPICAL. MD-104.32-01 - INTERSECTION FLAGGING OPERATION.
 - A STAGING AND STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR AND APPROVED BY HOWARD COUNTY ENGINEER.
 - TOPOGRAPHIC SURVEY INFORMATION BASED ON FIELD SURVEY PERFORMED BY SPOTTS, STEVENS, AND MCCOY, INC. DATED 9/19/91 AND UPDATED BY R.B.A. ON 1/21/97.



LOCATION MAP
SCALE 1" = 2000'

CAPITAL PROJECT NO. T-7058/J-4168G

Roxbury Road at Md Route 97

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

BENCH MARKS

- B.M. #3132001** ELEV. 480.54
3/4 INCH REINFORCING ROD LOCATED 0.7 FEET BELOW SURFACE ON HIGH ROCKY HILL.
- B.M. #3132002** ELEV. 476.65
CONCRETE MONUMENT LOCATED 0.4 FEET BELOW SURFACE ON GRASSY KNOLL.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Cheryl Simms / 65 12/15/97
U.S. Natural Resources Conservation Service DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Yvette Alj 12/15/97
Howard Soil Conservation District DATE

APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT. DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jan 7 Jan 1/15/90
DEPARTMENT OF PUBLIC WORKS DATE

Richard J. Johnson 12/15/97
CHIEF, BUREAU OF ENGINEERING DATE

Richard J. Johnson 1-15-98
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
12/12/97

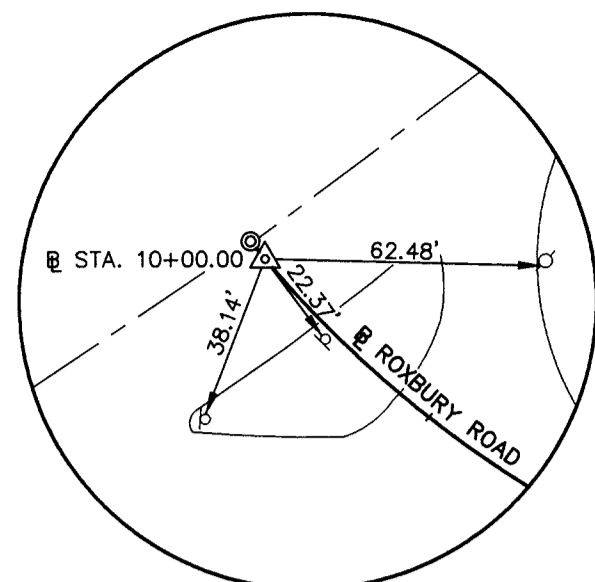
DES: S.R.H.			
DRN: J.N.W.			
CHK: D.P.O.			
DATE: 12/97			
BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
T-7058/J-4168G

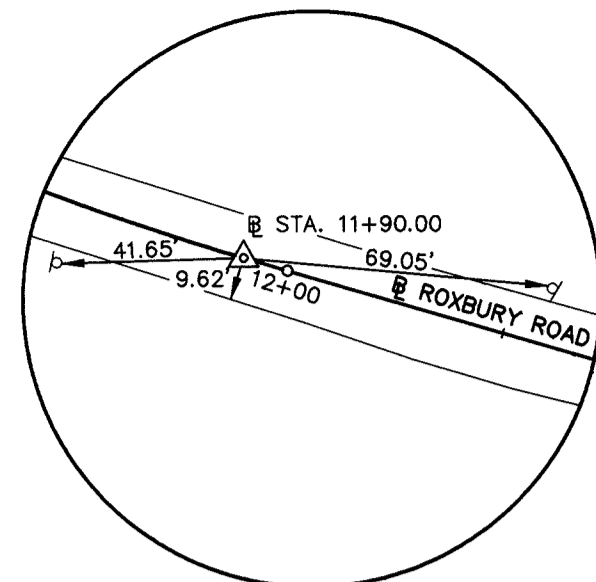
600' SCALE MAP NO. _____ DATE: _____

TITLE SHEET
Roxbury Road at Md Route 97

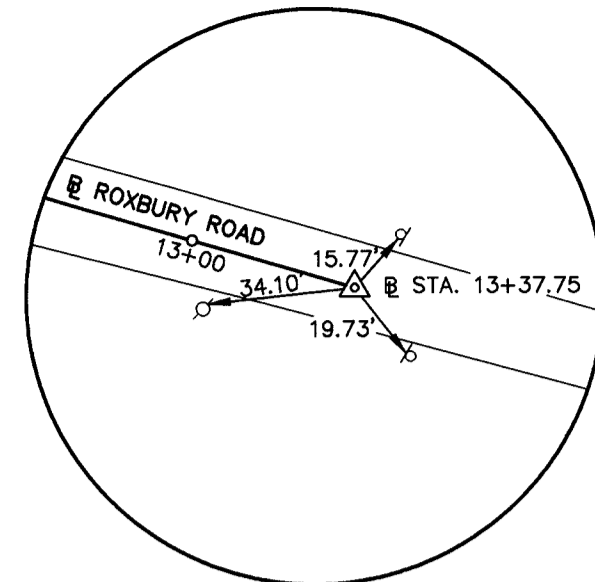
SHEET 1 OF 8



STA. 10+00.00
NOT TO SCALE



STA. 11+90.00
NOT TO SCALE

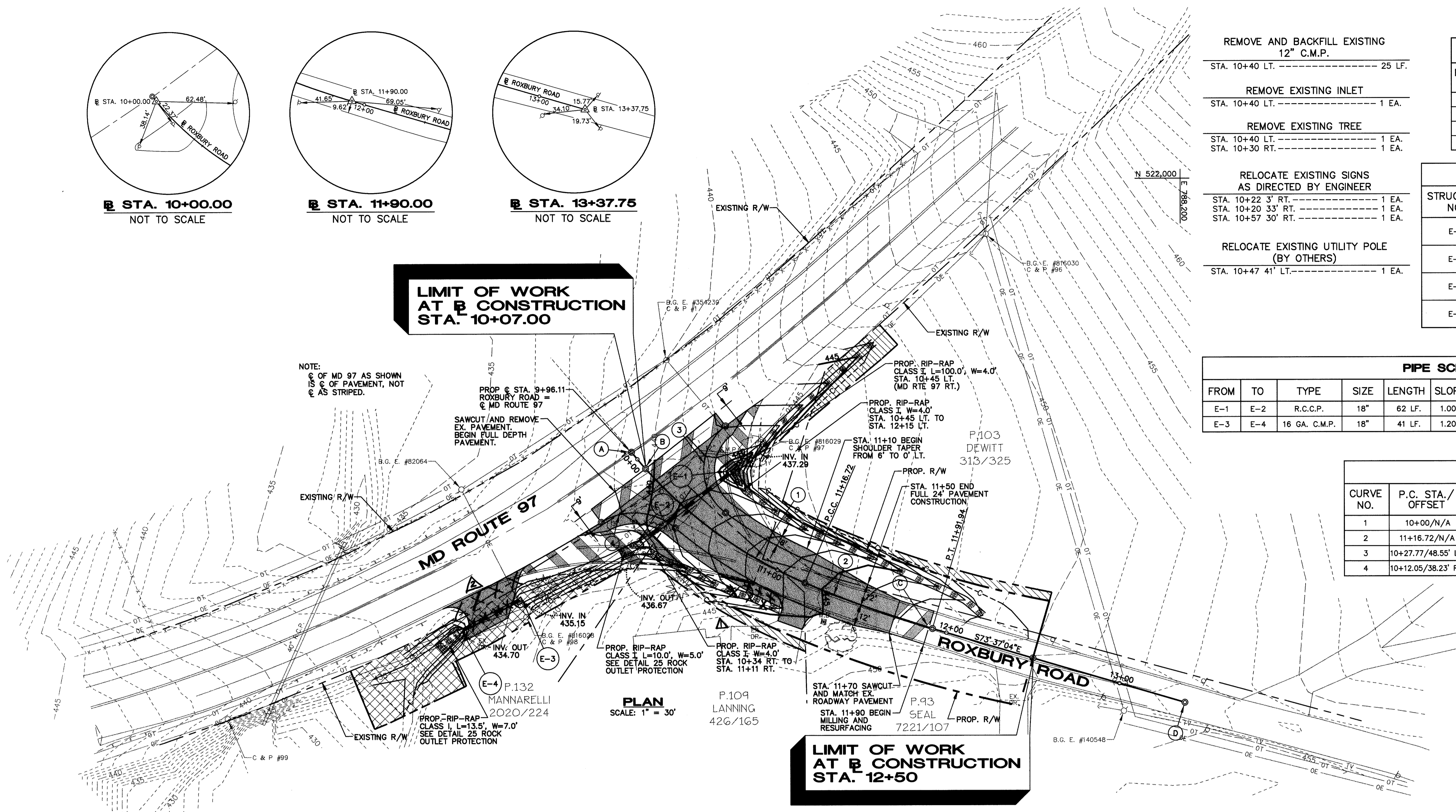


STA. 13+37.75
NOT TO SCALE

**LIMIT OF WORK
AT B CONSTRUCTION
STA. 10+07.00**

**LIMIT OF WORK
AT B CONSTRUCTION
STA. 12+50**

NOTE:
C OF MD 97 AS SHOWN
IS C OF PAVEMENT, NOT
C AS STRIPED.



- REMOVE AND BACKFILL EXISTING 12" C.M.P.
STA. 10+40 LT.----- 25 LF.
- REMOVE EXISTING INLET
STA. 10+40 LT.----- 1 EA.
- REMOVE EXISTING TREE
STA. 10+40 LT.----- 1 EA.
STA. 10+30 RT.----- 1 EA.
- RELOCATE EXISTING SIGNS AS DIRECTED BY ENGINEER
STA. 10+22 3' RT.----- 1 EA.
STA. 10+20 33' RT.----- 1 EA.
STA. 10+57 30' RT.----- 1 EA.
- RELOCATE EXISTING UTILITY POLE (BY OTHERS)
STA. 10+47 41' LT.----- 1 EA.

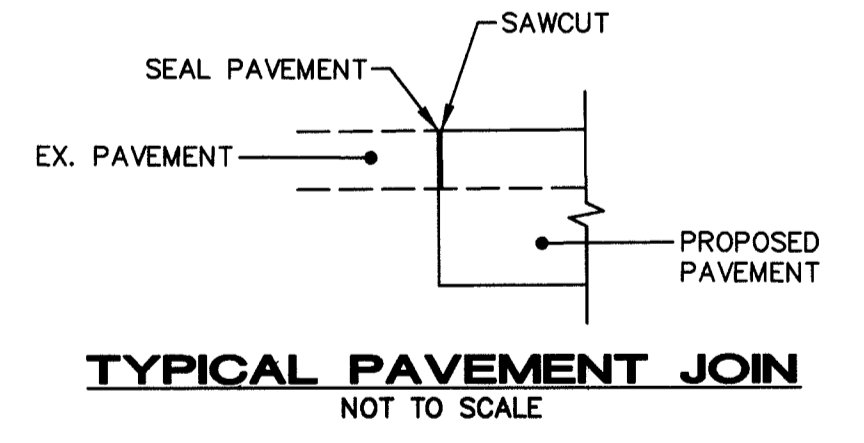
CONSTRUCTION & GEOMETRY			
POINT NO.	NORTH	EAST	REMARK
A	521848.66	787895.50	C MD ROUTE 97
B	521839.40	787903.32	STA. 10+07
C	521750.71	788060.39	STA. 11+90
D	521709.03	788202.14	STA. 13+37.75

STRUCTURE SCHEDULE			
STRUCTURE NO.	TYPE	REMARKS	STATION/OFFSET
E-1	TYPE 'E' HEADWALL	SD-5.31 RIPRAP L=10' WITH FILTER CLOTH	10+44.5 29.8' LT.
E-2	STD. CONC. END SECTION	SD-5.51 RIPRAP 10'x5' WITH FILTER CLOTH	10+32.8 30.3' RT.
E-3	METAL END SECTION CIRCULAR PIPE	SD-5.61	10+12.5 101.2' RT.
E-4	METAL END SECTION CIRCULAR PIPE	SD-5.61 RIPRAP L=10' WITH FILTER CLOTH	10+07.0 135.8' RT.

PIPE SCHEDULE									
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO	Q (cfs)	V (fps)
E-1	E-2	R.C.C.P.	18"	62 LF.	1.00%	437.29	436.67	9.8	6.8
E-3	E-4	16 GA. C.M.P.	18"	41 LF.	1.20%	435.15	434.70	11.8	4.7

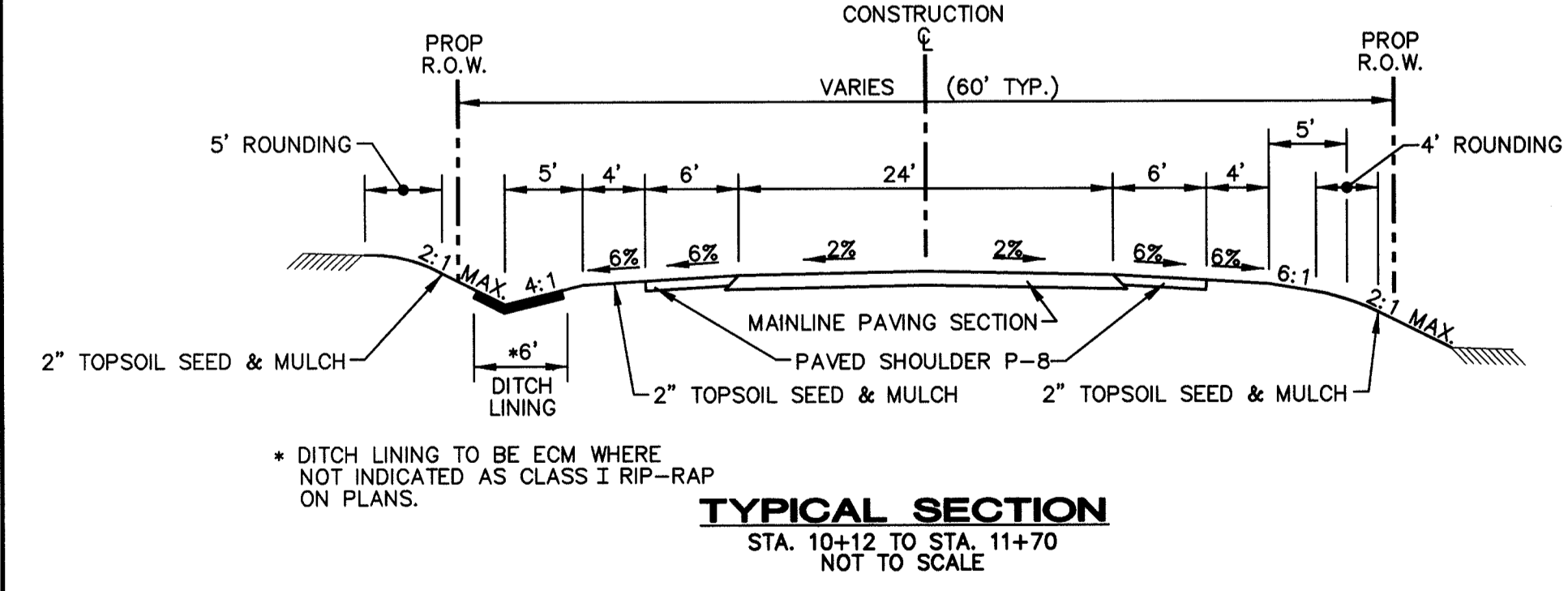
CURVE DATA						
CURVE NO.	P.C. STA./ OFFSET	P.T. STA./ OFFSET	Δ	R	T	L
1	10+00/N/A	11+16.72/N/A	26° 45'00"	250.00'	59.44'	116.72'
2	11+16.72/N/A	11+91.94/N/A	6° 32'04"	625.00'	37.65'	75.22'
3	10+27.77/48.55' LT.	10+57.42/12' LT.	106° 24'13"	30.00'	40.30'	55.86'
4	10+12.05/38.23' RT.	10+40.97/12' RT.	72° 07'54"	35.00'	25.52'	44.10'

DRIVEWAY TABLE		
C OF STATION	WIDTH	STD. DETAIL
10+15 .00 RT.	18'	R-6.06
11+21 .00 RT.	14'	R-6.06

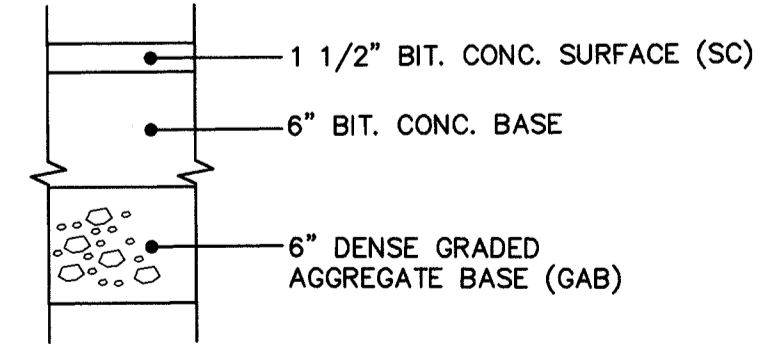


TYPICAL PAVEMENT JOIN
NOT TO SCALE

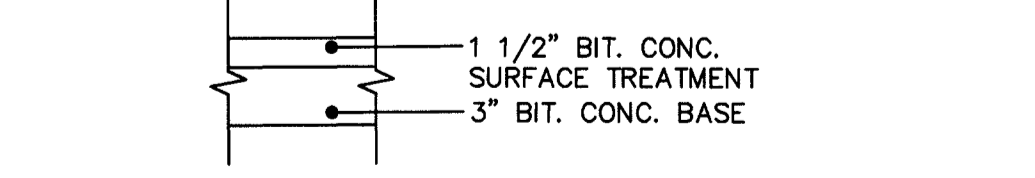
- LEGEND**
- [Pattern] - FULL DEPTH CONSTRUCTION
 - [Pattern] - MILL AND RESURFACE
 - [Pattern] - EXISTING PAVEMENT TO BE REMOVED
 - [Pattern] - REVERTIBLE GRADING EASEMENT
 - [Pattern] - PERMANENT DRAINAGE EASEMENT
 - - - C - - - TOP OF CUT
 - - - F - - - LIMIT OF FILL



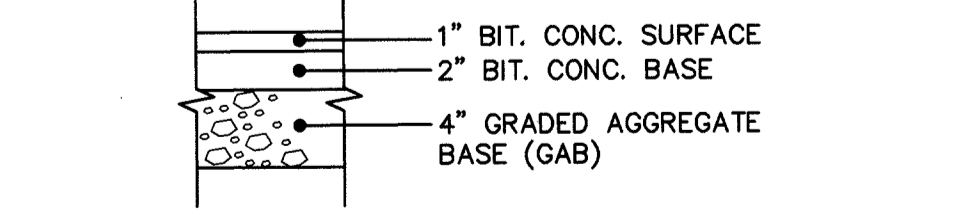
TYPICAL SECTION
STA. 10+12 TO STA. 11+70
NOT TO SCALE



MAINLINE PAVING SECTION
NOT TO SCALE



P-8 PAVING SECTION (SHOULDER)
NOT TO SCALE



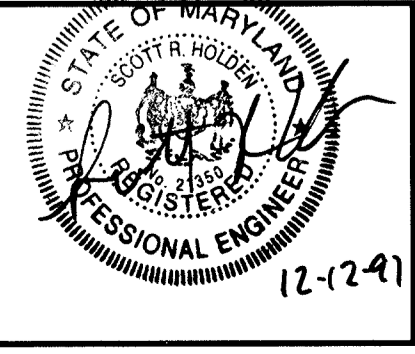
P-1 PAVING SECTION (DRIVEWAY)
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

1/15/98
12/15/97

12/15/97
1-15-98

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020



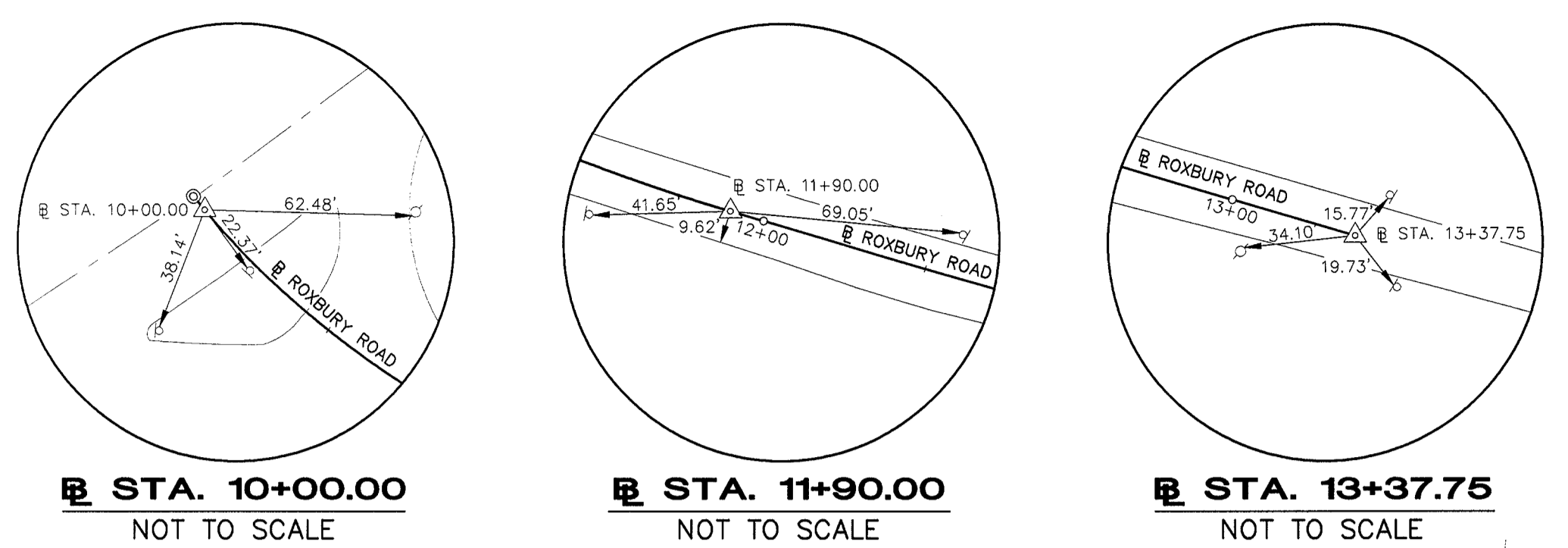
DES: S.R.H.
DRN: M.J.G.
CHK: D.P.O.
DATE: 12/97

REVISION

CAPITAL PROJECT NO.
T-7058/J-4168G

PLAN SHEET
**Roxbury Road at
Md Route 97**

SCALE AS SHOWN
SHEET 2 OF 8



STA. 10+00.00
NOT TO SCALE

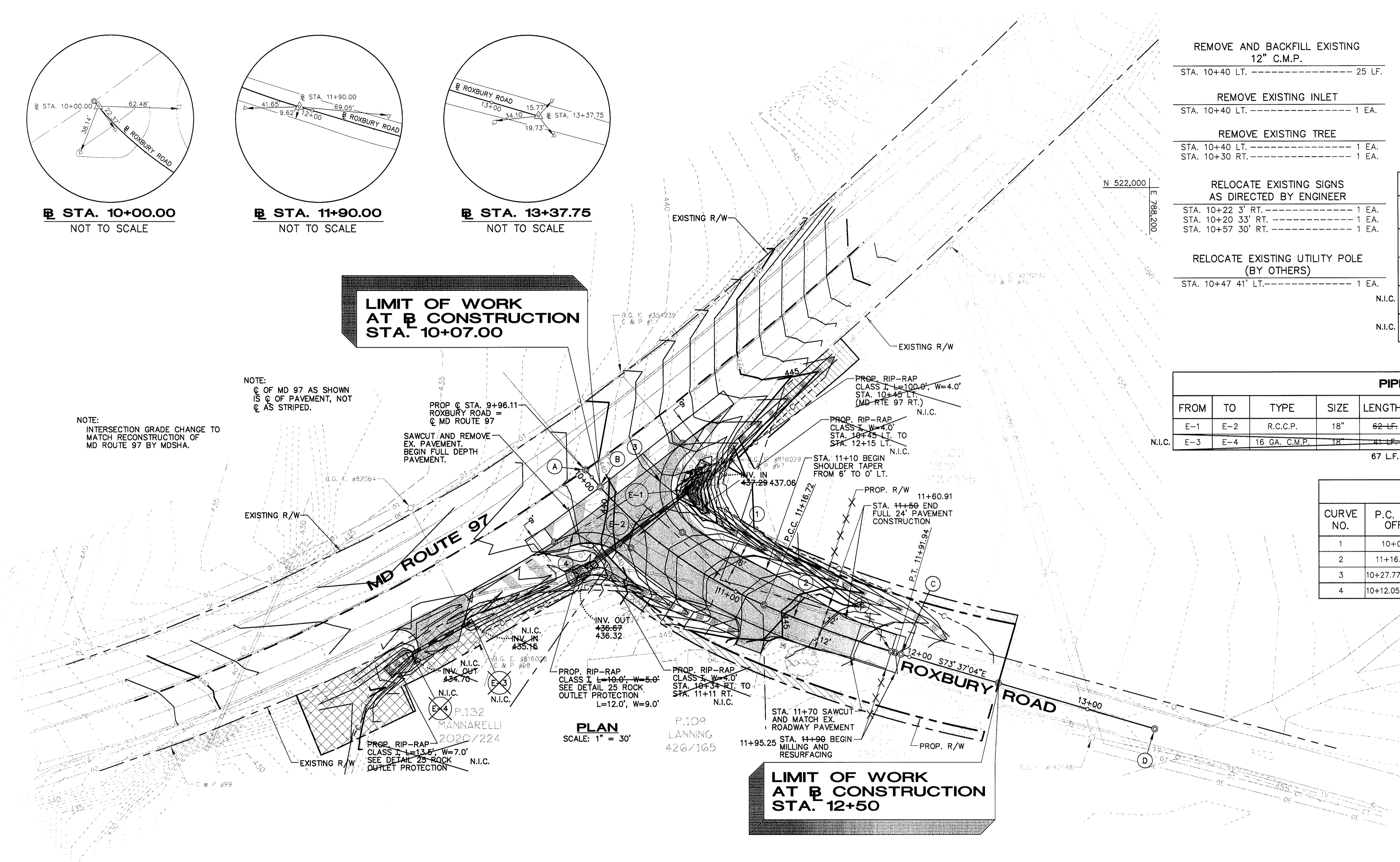
STA. 11+90.00
NOT TO SCALE

STA. 13+37.75
NOT TO SCALE

LIMIT OF WORK AT B CONSTRUCTION STA. 10+07.00

NOTE:
INTERSECTION GRADE CHANGE TO MATCH RECONSTRUCTION OF MD ROUTE 97 BY MDSA.

NOTE:
C OF MD 97 AS SHOWN IS C OF PAVEMENT, NOT C AS STRIPED.



REMOVE AND BACKFILL EXISTING 12" C.M.P.
STA. 10+40 LT. ----- 25 LF.

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REMOVE EXISTING TREE
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STA. 10+30 RT. ----- 1 EA.

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STA. 10+22 3' RT. ----- 1 EA.
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STA. 10+57 30' RT. ----- 1 EA.

RELOCATE EXISTING UTILITY POLE (BY OTHERS)
STA. 10+47 41' LT. ----- 1 EA.

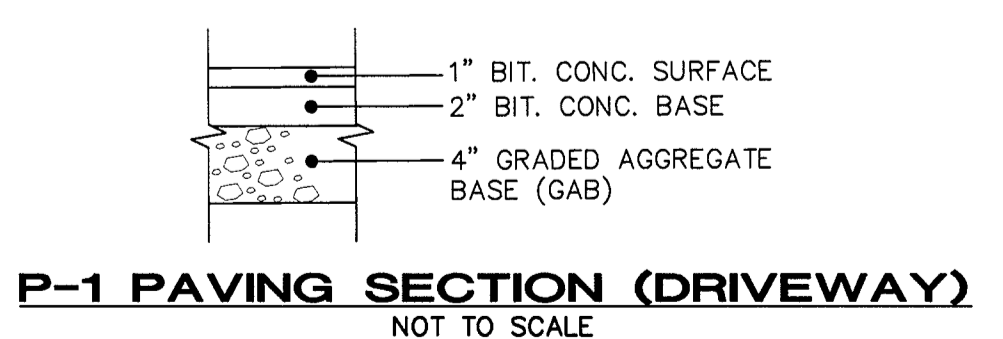
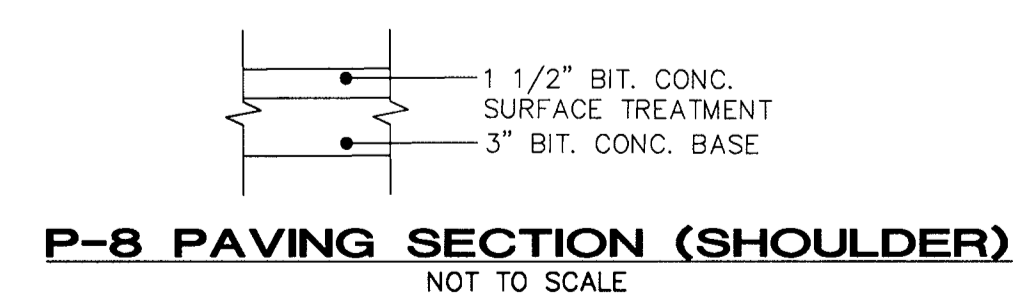
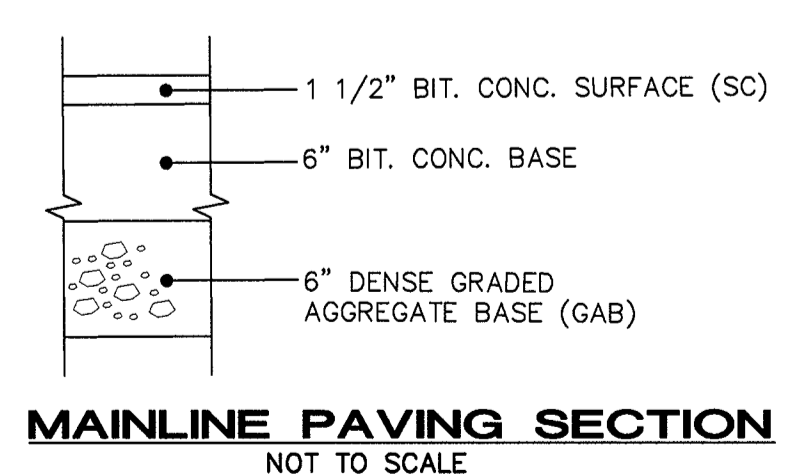
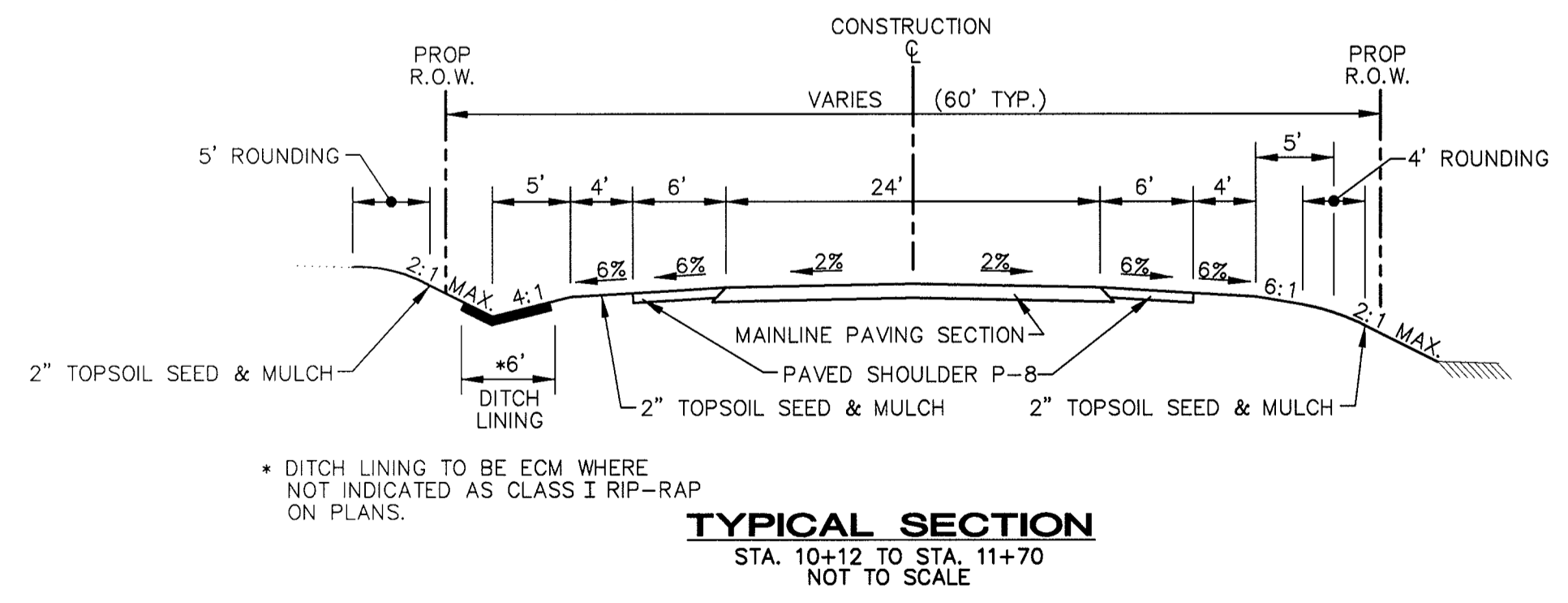
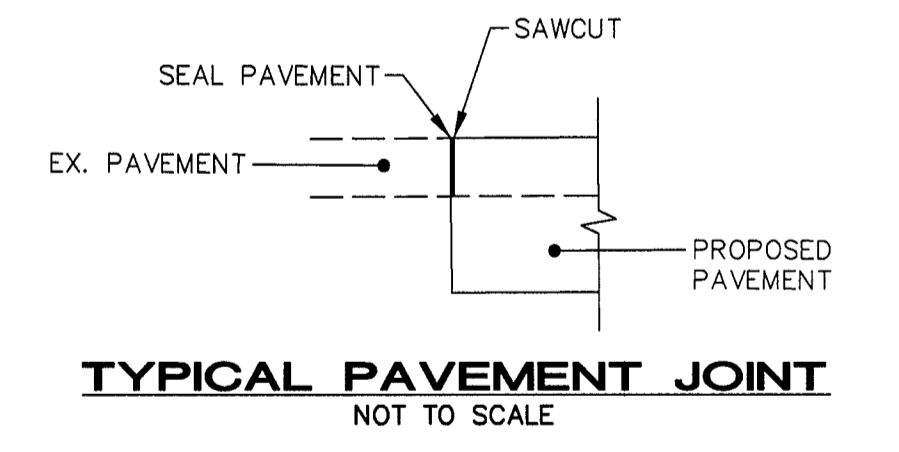
CONSTRUCTION & GEOMETRY			
POINT NO.	NORTH	EAST	REMARK
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B	521839.40	787903.32	STA. 10+07
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D	521709.03	788202.14	STA. 13+37.75
	521748.24	788065.38	11+95.25

STRUCTURE SCHEDULE			
STRUCTURE NO.	TYPE	REMARKS	STATION/OFFSET
E-1	TYPE 'E' HEADWALL	SD-5.31 RIPRAP 56'x6'	10+44.5 29.8' LT.
E-2	STD. CONC. END SECTION	SD-5.51 RIPRAP 10'x5' 12'x9'	10+32.8 30.3' RT. 10+31.8 35.3' RT.
N.I.C.	METAL END SECTION CIRCULAR PIPE	SD-5.61	10+12.5 101.2' RT.
N.I.C.	METAL END SECTION CIRCULAR PIPE	SD-5.61 RIPRAP L=10'	10+07.0 135.8' RT.

PIPE SCHEDULE										
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO	Q (cfs)	V (fps)	
E-1	E-2	R.C.C.P.	18"	62 LF.	+0.0%	437.29	436.67	9.8	7.0	
E-3	E-4	16 GA. C.M.P.	18"	41 LF.	+2.0%	435.15	434.70	11.8	6.2	
				67 LF.	1.10%	437.06	436.32			

CURVE DATA						
CURVE NO.	P.C. STA./OFFSET	P.T. STA./OFFSET	Δ	R	T	L
1	10+00/N/A	11+16.72/N/A	26° 45' 00"	250.00'	59.44'	116.72'
2	11+16.72/N/A	11+91.94/N/A	6° 32' 04"	625.00'	37.65'	75.22'
3	10+27.77/48.55' LT.	10+57.42/12' LT.	106° 24' 13"	30.00'	40.30'	55.86'
4	10+12.05/38.23' RT.	10+40.97/12' RT.	72° 07' 54"	35.00'	25.52'	44.10'

DRIVEWAY TABLE		
C STATION	WIDTH	STD. DETAIL
10+15 .00 RT.	18'	R-6.06
11+21 .00 RT.	14'	R-6.06



LEGEND

- [Hatched Box] - FULL DEPTH CONSTRUCTION
- [Diagonal Lines] - MILL AND RESURFACE
- [Cross-hatched Box] - EXISTING PAVEMENT TO BE REMOVED
- [Dashed Box] - REVERTIBLE GRADING EASEMENT
- [Dotted Box] - PERMANENT DRAINAGE EASEMENT
- C --- - TOP OF CUT
- F --- - LIMIT OF FILL

AS-BUILT 8/4/99 N.I.C. - NOT IN CONTRACT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS DATE _____
CHIEF, BUREAU OF ENGINEERING DATE _____

CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE _____
CHIEF, BUREAU OF HIGHWAYS DATE _____

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020

DES: S.R.H.
DRN: M.J.G.
CHK: D.P.O.
DATE: 1/98

BY NO. REVISION DATE

CAPITAL PROJECT NO.
T-7058/J-4168G

600' SCALE MAP NO. _____ DATE: _____

PLAN SHEET
Roxbury Road at Md Route 97

SCALE AS SHOWN
SHEET **24** OF **8**

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1825).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER FENCES AND ALL SLOPES STEEPER THAN 3:1. 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS, SO, TEMPORARY SEEDING, AND MULCHING (SEC. 9). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	0.51 ACRES
AREA DISTURBED	0.48 ACRES
AREA TO BE ROOFED OR PAVED	0.15 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.30 ACRES
TOTAL CUT	581 CU. YDS.
TOTAL FILL	0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED BY CONTRACTOR (SITE WITH A CURRENT ACTIVE GRADING PERMIT)

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Section I - Vegetative Stabilization Methods and Materials

- Site Preparation**
 1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 2. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 3. Schedule required soil tests to determine soil amendment composition and application rates for site having disturbed area over 5 acres.
- Soil Amendments (Fertilizer and Lime Specifications)**
 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
 3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxide (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
 4. Incorporate lime and fertilizer into the top 3"-5" of soil by diking or other suitable means.
- Seedbed Preparation**
 1. Temporary Seeding
 - a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - b. Apply fertilizer and lime as prescribed on the plans.
 - c. Incorporate lime and fertilizer into the top 3" - 5" of soil by diking or other suitable means.
 2. Permanent Seeding
 - a. Minimum soil conditions required for permanent vegetative establishment:
 1. Soil pH shall be between 6.0 and 7.0.
 2. Soluble salts shall be less than 500 parts per million (ppm).
 3. The soil shall contain less than 40% clay but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lowgrass or serotica lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
 4. Soil shall contain 1.5% minimum organic matter by weight.
 5. Soil shall contain sufficient pore space to permit adequate root penetration.
 6. If these conditions cannot be met by soils on site, topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 - b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3" - 5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - c. Apply soil amendments as per soil test or as included on the plans.
 - d. Mix soil amendments into top 3" - 5" of topsoil by diking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1" - 3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
- Seed Specifications**
 1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 2. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculant shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four

3. times the recommended rate when hydroseeding.

Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75-80 F. can weaken bacteria and make the inoculant less effective.
4. Methods of Seeding
 1. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
 - a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/acre; K2O (potassium); 200 lbs/acre.
 - b. Lime - use only ground limestone (5:1). Up to 3 tons per acre may be applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 2. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 3. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
5. Mulch Specifications (In order of preference)
 1. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 2. Wood Cellulose Fiber Mulch (WCFM).
 - a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - c. WCFM including dy, shall contain no germination or growth inhibiting factors.
 - d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a biotter-like ground cover, an application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - e. WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.8% maximum and water holding capacity of 30% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
6. Mulching Seeded Areas
 1. Mulch shall be applied to all seeded areas immediately after seeding. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 2. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 3. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
7. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
 1. A mulch anchoring tool is a tractor drawing implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. The practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 2. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 3. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. The remainder of area should appear to be uniform after binder application. Synthetic binders - such as Acrylic DLR (Ago-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition and Purpose
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
To provide a suitable soil medium for vegetative growth. Soils of concern have a low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

- Conditions Where Practice Applies**
1. This practice is limited to areas having 2:1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - c. The original soil to be vegetated contains material toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
 2. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have that appropriate stabilization shown on the plans.

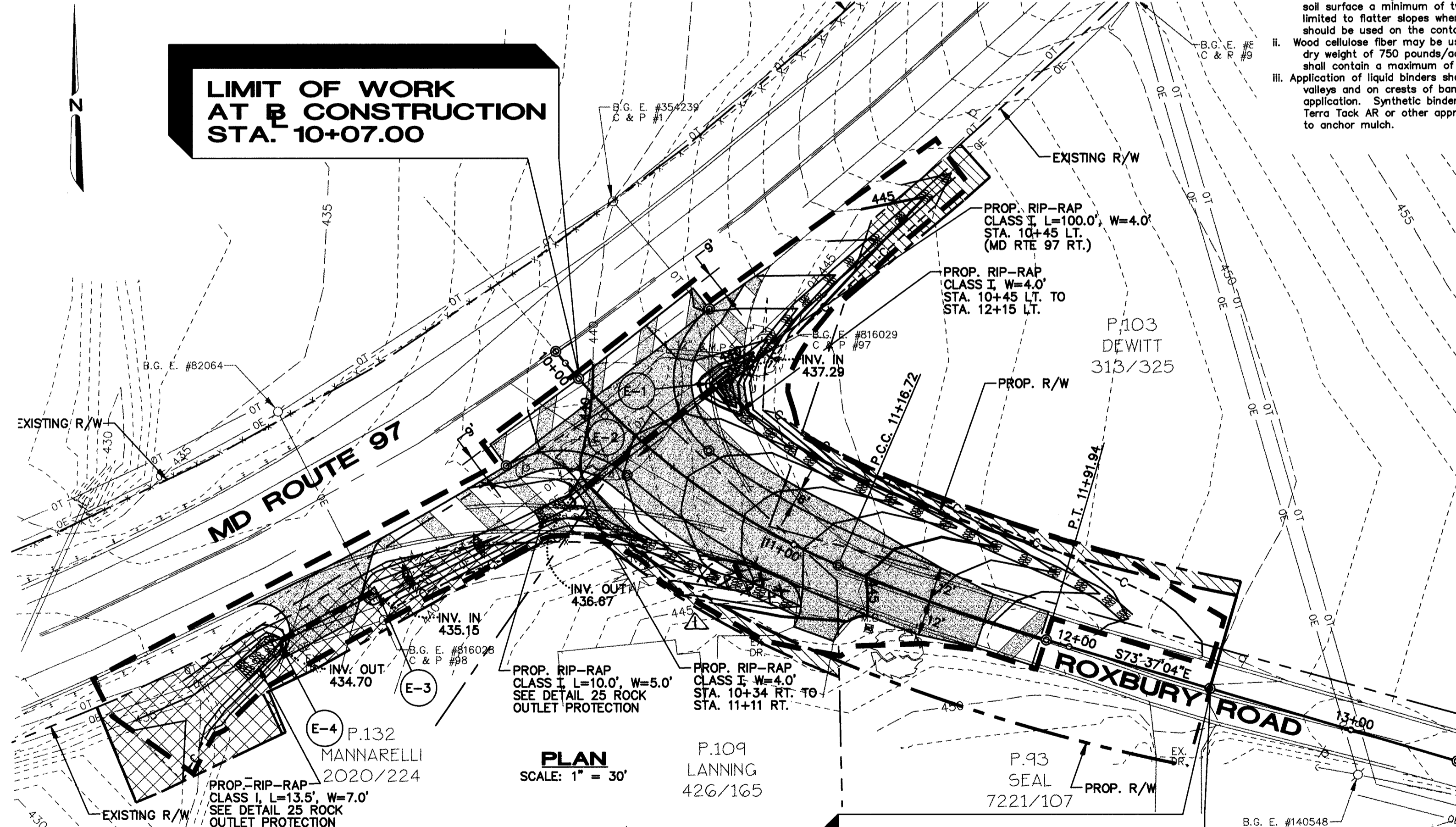
- Construction and Material Specifications**
1. Topsoil salvaged from existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SSS in cooperation with Maryland Agricultural Experimental Station.
 2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
 1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stone, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 2. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutcase, poison ivy, thistle, or others as specified.
 3. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 3. For sites having disturbed areas under 5 acres:
 1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- Topsoil Application**
1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4"-8" higher in elevation.
 3. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
 4. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

SEQUENCE OF CONSTRUCTION

1. OBTAIN PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO PROCEED. - 1 DAY
2. INSTALL ALL SEDIMENT CONTROL MEASURES AS SHOWN ON PLANS. - 3 DAYS (SEE NOTES BELOW)
3. EXCAVATE FOR THE CONSTRUCTION OF ROADWAY. STABILIZE THE ROADWAY WITH D.G.A.B. MATERIAL. INSTALL SODDING TO ALL SLOPE AREAS THAT ARE DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT EXPOSE EARTH THAT CANNOT BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 24 HOURS. - 10 DAYS
4. PLACE PERMANENT STABILIZATION ON EARTH SLOPES. - 2 DAYS
5. INSTALL BITUMINOUS CONCRETE BASE COURSE ON ROADWAY. - 2 DAYS
6. PLACE BITUMINOUS CONCRETE SURFACE COURSES. - 2 DAYS
7. REMOVE SEDIMENT CONTROL DEVICES WITH APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. - 1 DAY

NOTES

1. CONTRACTOR TO PROVIDE STONE CONSTRUCTION ENTRANCES IN THE WORK ZONES DURING ALL PHASES OF CONSTRUCTION. SEE DETAIL NO. 24 ON SHEET 4 OF 8 AND WORK ZONE DELINEATIONS ON SHEETS 3, 6 AND 7 OF 8.
2. PROVIDE E.C.M. DITCH LINING FOR ALL SWALES WHERE RIP-RAP LINING IS NOT INDICATED.
3. AS DIRECTED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR ADDITIONAL STONE CHECK DAMS MAY BE REQUIRED.



ENGINEER CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SEDIMENT CONTROL DISTRICT."

Scott R. Wolcott
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
12-16-97
DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SEDIMENT CONTROL DISTRICT."

Richard J. Mannarelli
SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
12/15/97
DATE

FOR SEDIMENT & EROSION CONTROL ONLY

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

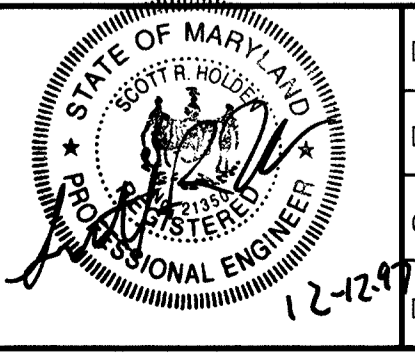
Janet M. ... 11/15/98
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

Elizabeth ... 12/15/97
DATE

Richard J. Mannarelli 12/15/97
CHIEF, BUREAU OF ENGINEERING

Richard J. Mannarelli 1-15-98
CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020



DES: S.R.H.	LPK	Remove shoulder from 10+40 to 11+20 RT. stabilize slope with matting. Remove riprap ditch from 10+80 to 11+20 RT.	4/15/98
DRN: M.J.G.			
CHK: D.P.O.			
DATE: 12/97			

CAPITAL PROJECT NO.
T-7058/J-4168G

600' SCALE MAP NO. _____ DATE: _____

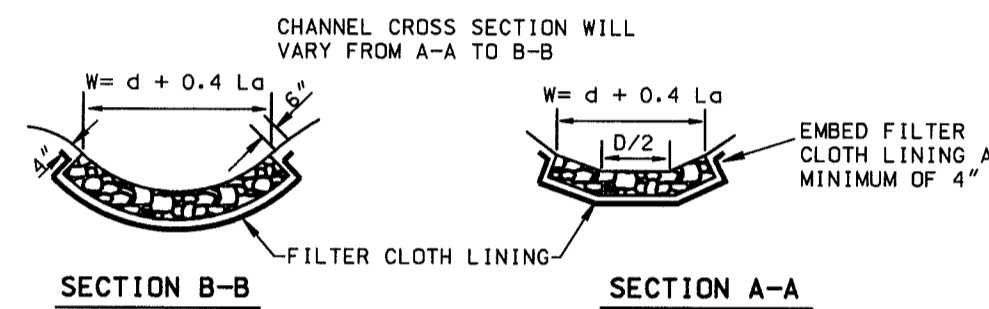
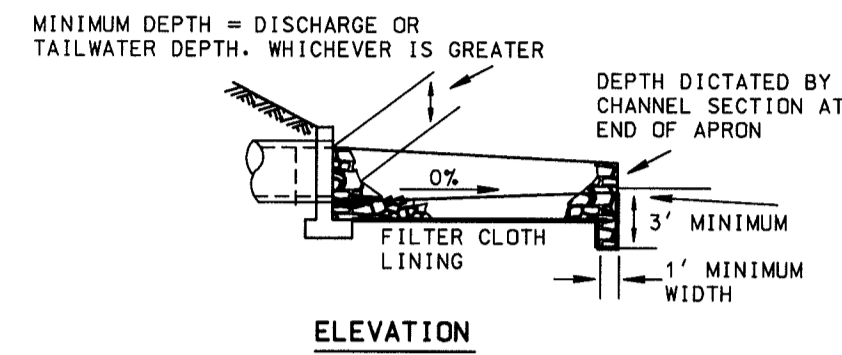
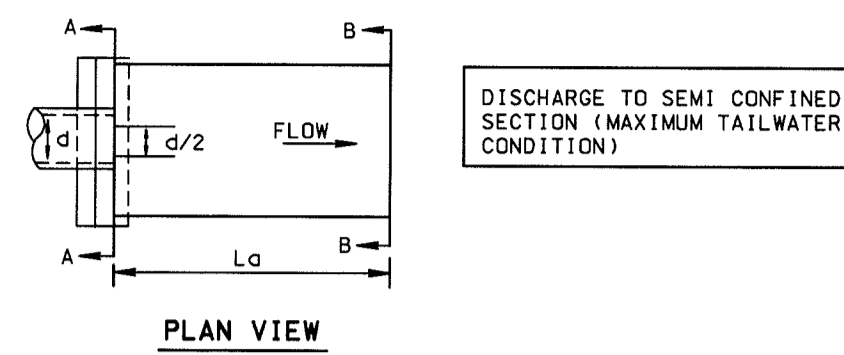
SEDIMENT AND EROSION CONTROL SHEET

Roxbury Road at Md Route 97

SCALE AS SHOWN

SHEET 3 OF 8

DETAIL 25 - ROCK OUTLET PROTECTION I



NOTE: FILTER CLOTH MUST EXTEND A MINIMUM OF 6" BEYOND APRON AND SIDES

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F - 28 - 8 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

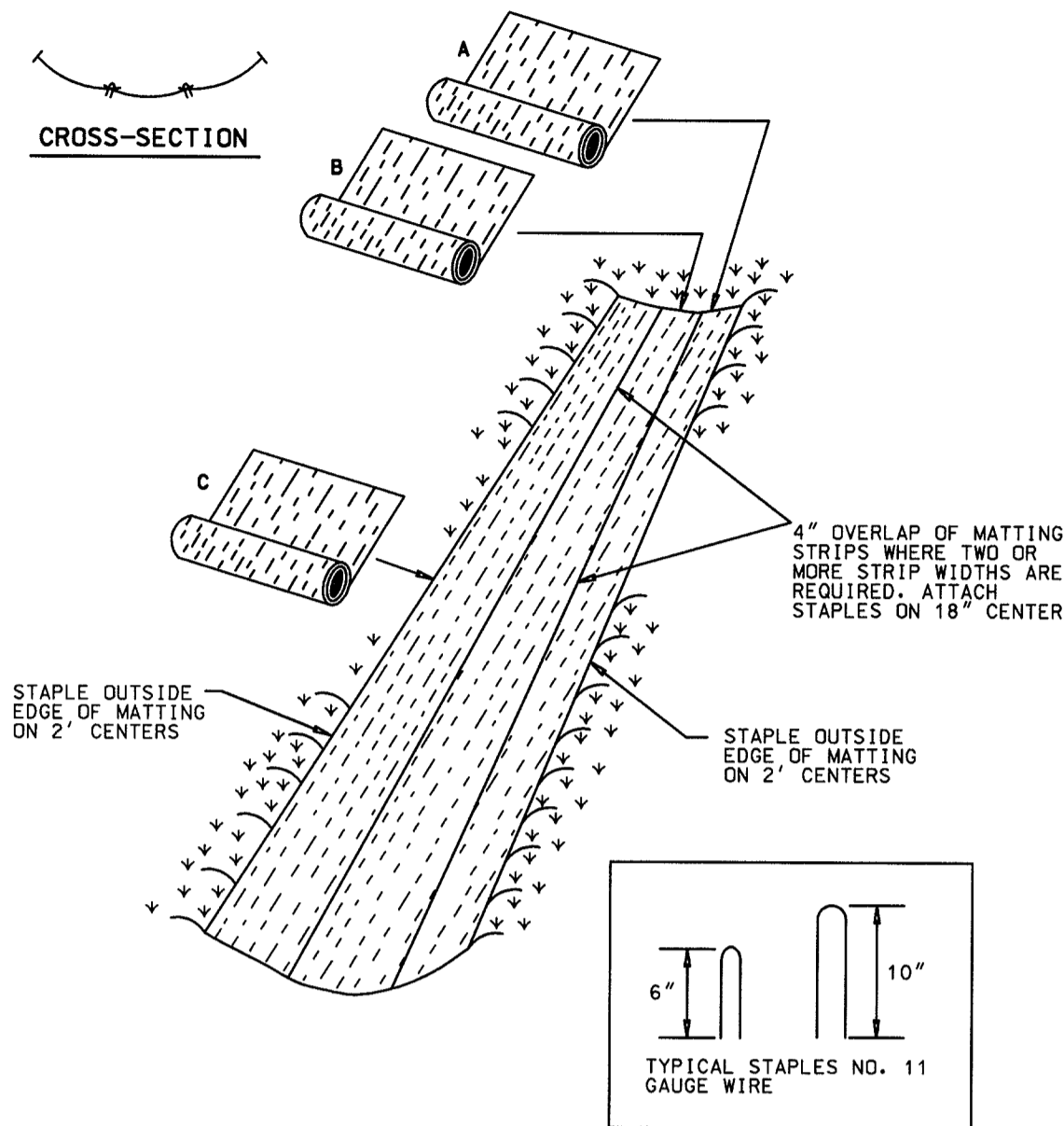
ROCK OUTLET PROTECTION I

Construction Specifications

- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
- Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F - 18 - 8A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 30 - EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G - 22 - 2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

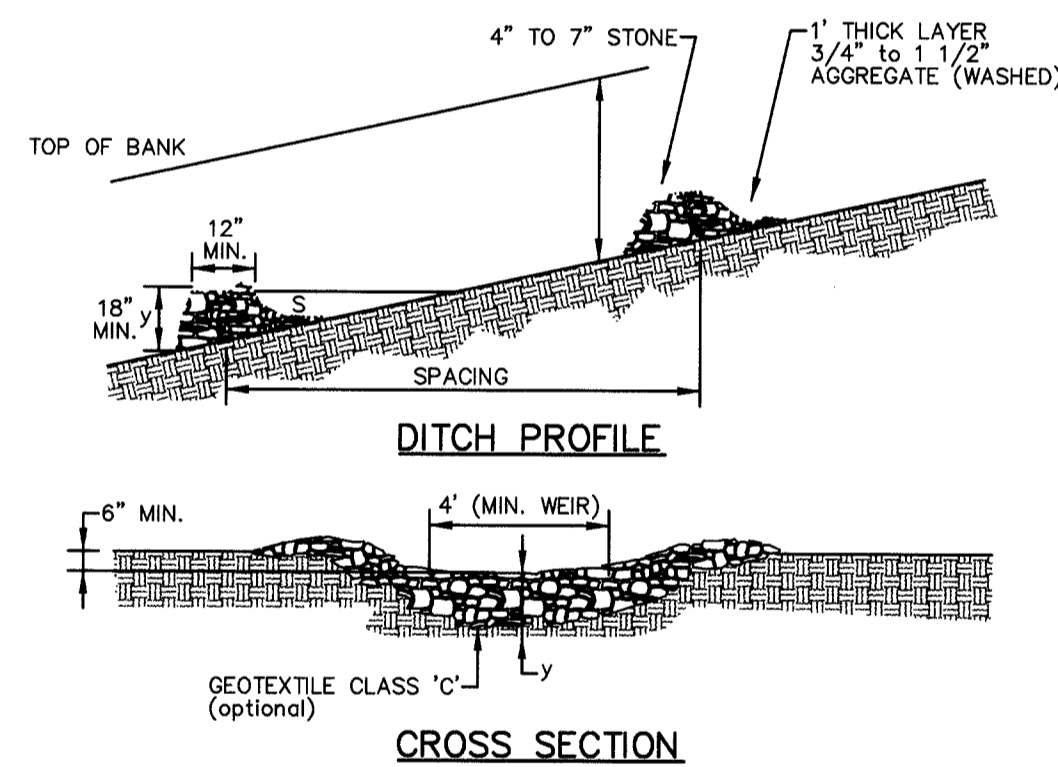
EROSION CONTROL MATTING

Construction Specifications

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
 - Staple the 4" overlap in the channel center using an 18" spacing between staples.
 - Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
 - Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
 - Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", ship-lap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
 - The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area affected by the flow must be keyed-in.

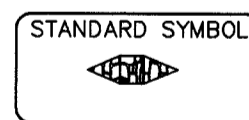
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G - 26 - 2A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 7 - STONE CHECK DAM



STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% or less	80'
2.1% to 4%	40'
4.1% to 7%	25'
7.1% to 10%	15'
over 10%	use lined waterway design

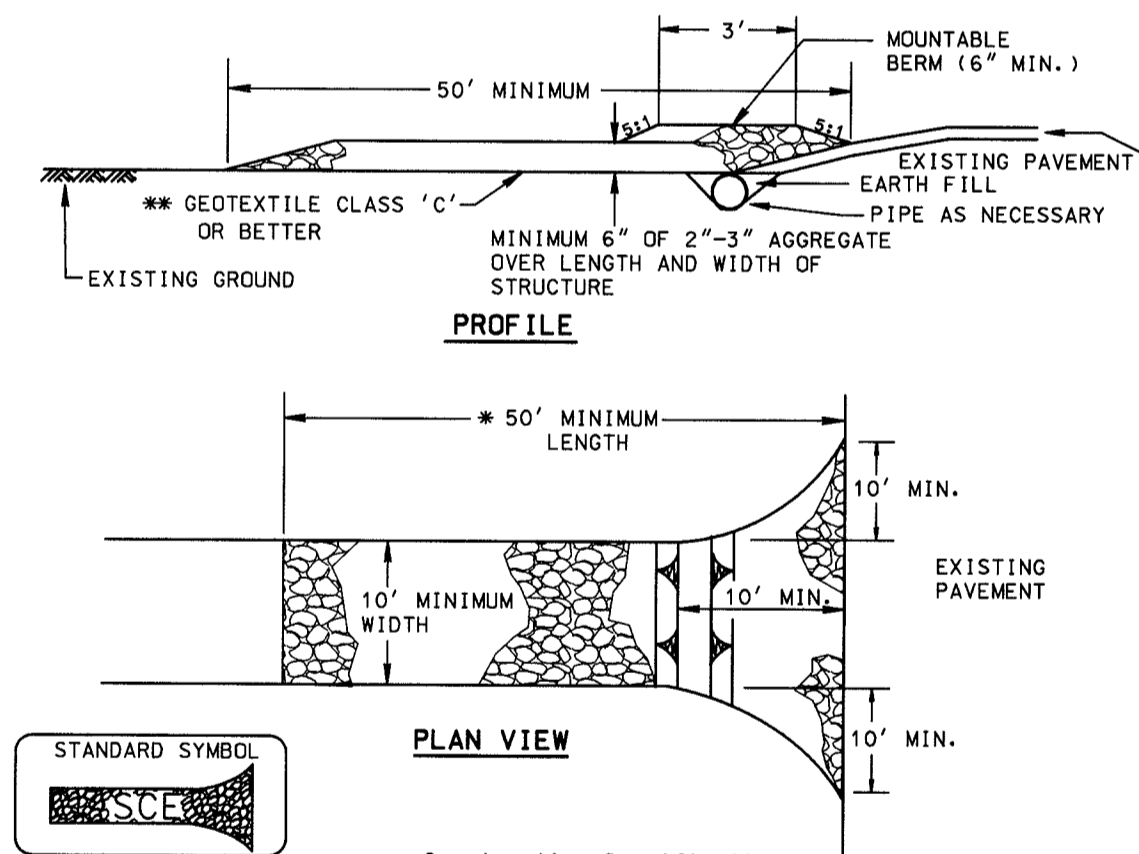


Construction Specifications

- Swales and ditches shall be prepared in accordance with the construction specifications described in Section A-2, Standards and Specifications for Temporary Swale.
- The check dam shall be constructed of 4"-7" stone. The stone shall be placed so that it completely covers the width of the channel and is keyed into the channel banks.
- The top of the check dam shall be constructed so the center is approximately 6" lower than the outer edges, forming a weir that water can flow across.
- The maximum height of the check dam at the center shall not exceed 2'.
- The upstream side of the check dam shall be lined with approximately 1' of 3/4" to 1 1/2" aggregate.
- Accumulated sediment shall be removed when it has built up to 1/2 of the original height of the weir crest.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 8 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Length - minimum of 50' (#30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F - 37 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STABILIZED CONSTRUCTION ENTRANCE

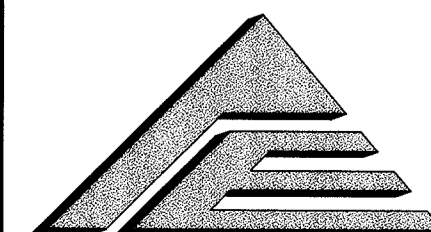
Construction Specification

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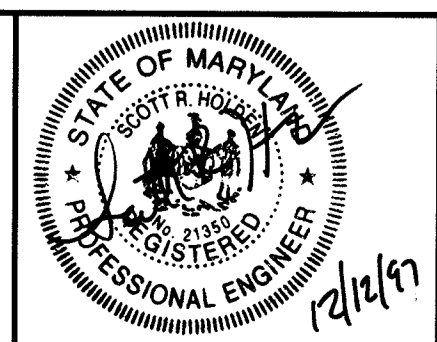
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F - 17 - 3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

1/15/98
12/15/97
1-15-98



A/E GROUP, INC.
ENGINEERS + PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020



DES: S.R.H.
DRN: M.J.G.
CHK: D.P.O.
DATE: 12/97

BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.

T-7058/J-4168G

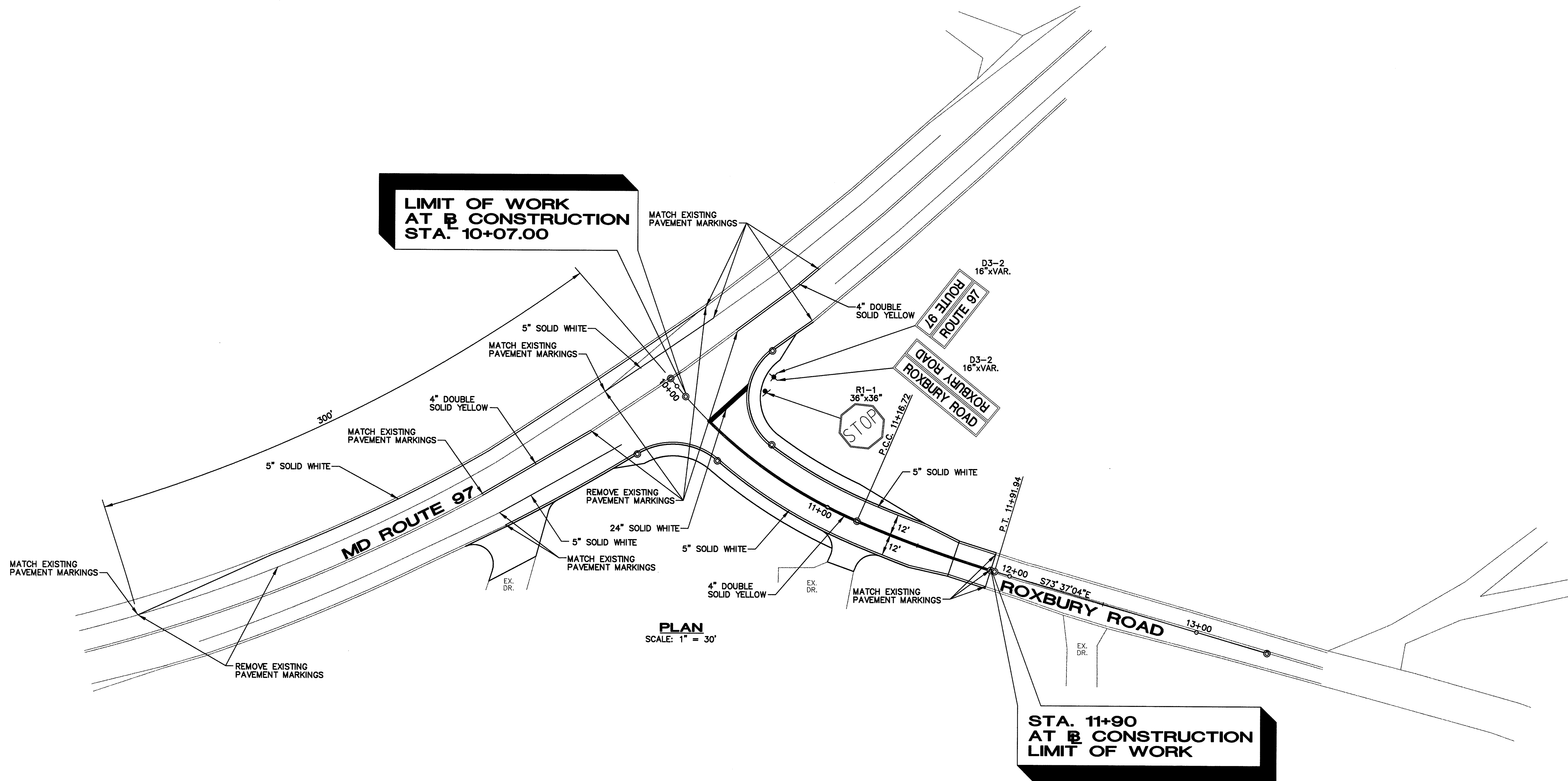
600' SCALE MAP NO. DATE:

SEDIMENT AND EROSION CONTROL DETAILS

Roxbury Road at
Md Route 97

SCALE AS SHOWN

SHEET 4 OF 8



PLAN
SCALE: 1" = 30'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

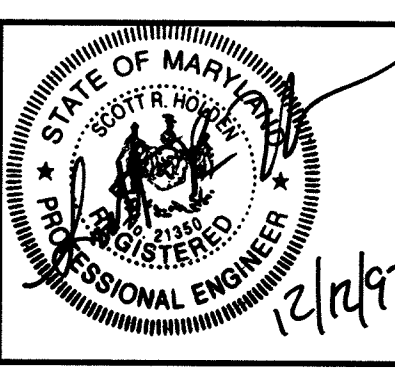
Janet... 1/15/98
DEPARTMENT OF PUBLIC WORKS DATE

Elizabeth A. Galia 12/15/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Robert... 12/15/97
CHIEF, BUREAU OF ENGINEERING DATE

Andrew... 1-15-99
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020



DES: S.R.H.				
DRN: M.J.G.				
CHK: D.P.O.				
DATE: 12/97	BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
T-7058/J-4168G

600' SCALE MAP NO. _____ DATE: _____

SIGNING AND MARKING PLAN
**Roxbury Road at
Md Route 97**

SCALE AS SHOWN

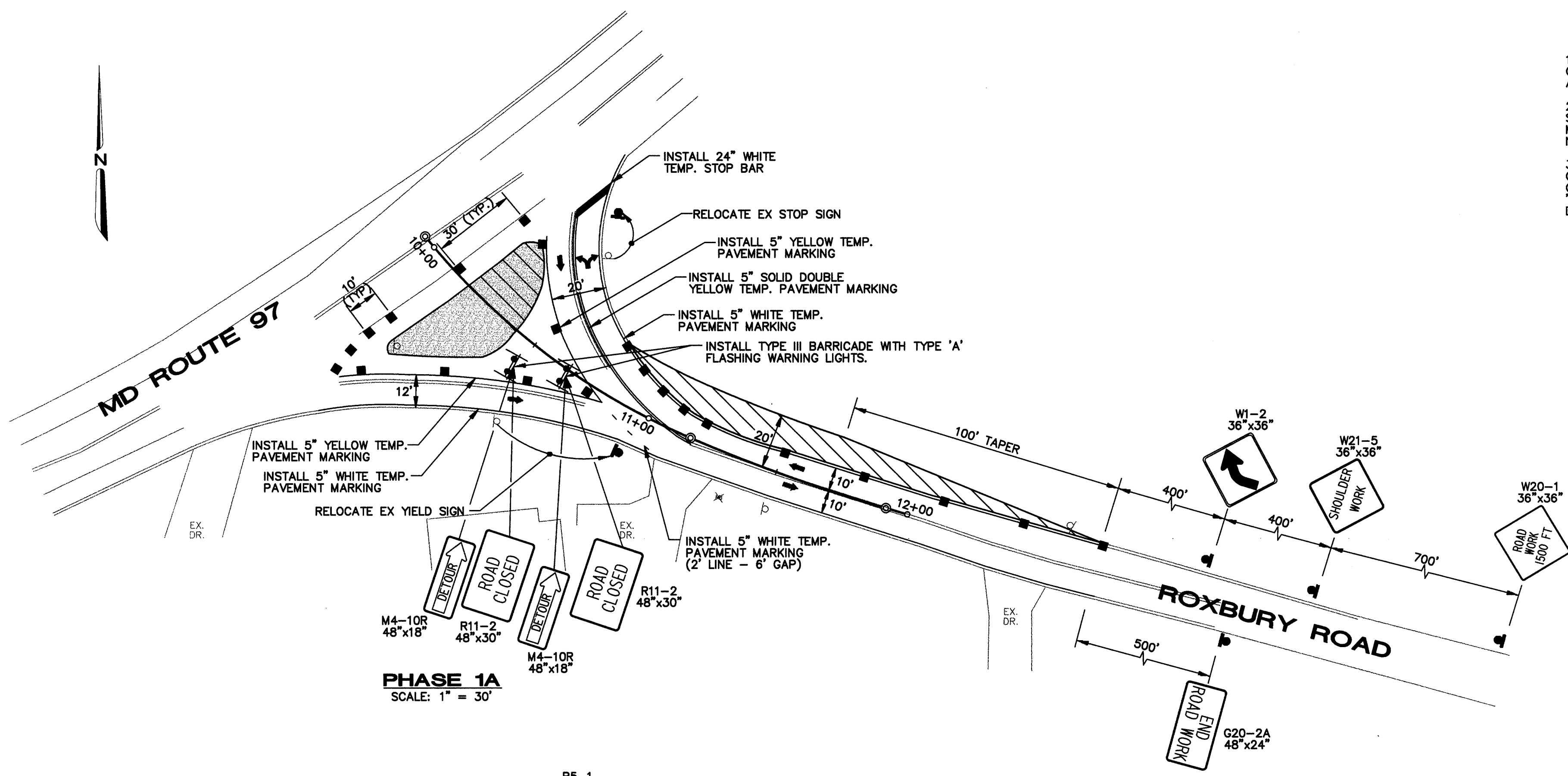
SHEET 5 OF 8

GENERAL NOTES

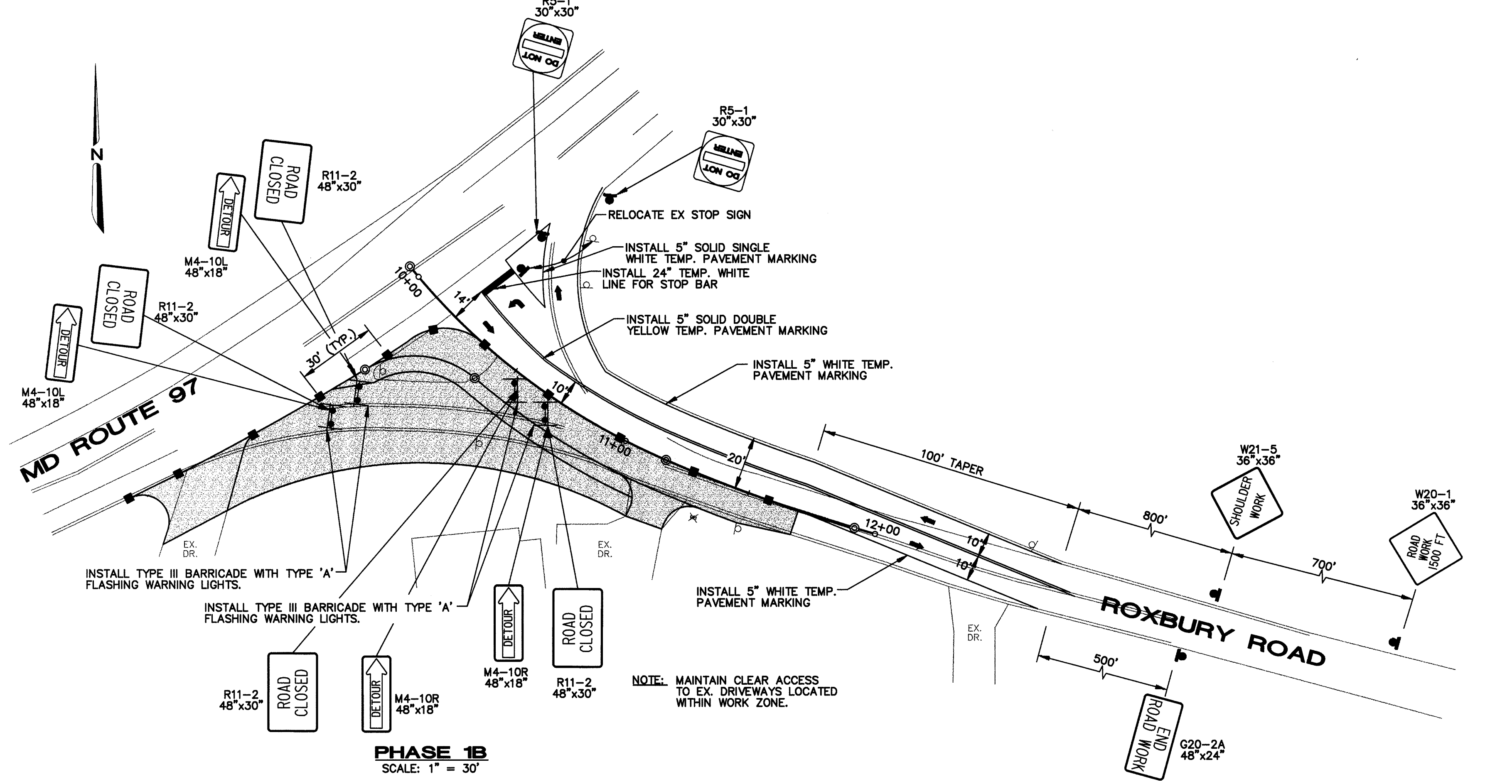
1. THE MAINTENANCE OF TRAFFIC PLAN AS SHOWN HEREON SHALL BE USED BY CONTRACTOR UNLESS AN ALTERNATE PLAN IS SUBMITTED, REVIEWED AND APPROVED BY THE HOWARD COUNTY ENGINEER.
2. SIGNING AND CHANNELIZATION ALONG MD 97 SHALL CONFORM WITH MD SHA STANDARD MD 104.04-01 "SHOULDER WORK/2-LANE, 2-WAY/OVER 40 MPH/OVER 12 HOURS" DURING ALL PHASES OF CONSTRUCTION UNLESS NOTED OTHERWISE ON PHASING DETAILS.
3. LANE CLOSURES OR FLAGGING OPERATIONS ALONG MD 97 WILL BE PERMITTED ONLY BETWEEN 9 A.M. AND 3 P.M. MONDAY THRU FRIDAY. ALL SIGNING AND CHANNELIZATION SHALL CONFORM WITH SHA STANDARD MD 104.31-01 "FLAGGING OPERATION/2-LANE, 2-WAY/OVER 40 MPH/15 MIN.-12 HRS" AS DIRECTED BY ENGINEER.

CONSTRUCTION PHASING

- PHASE 1
- 1.1 GRADE AND PLACE TEMPORARY PAVEMENT ALONG LEFT SIDE OF ROADWAY FROM STATION 10+80 TO 12+50 +/-, ALL SIGNING AND CHANNELIZATION DEVICES AS SHOWN ON MD SHA STANDARD MD104.33-02 "SHOULDER WORK/2-LANE, 2-WAY/ EQL/ LESS THAN 40 MPH/15 MIN.-12HRS OR DAYTIME ONLY" SHALL BE USED DURING CONSTRUCTION OF TEMPORARY PAVEMENT AS DIRECTED BY HOWARD COUNTY ENGINEER.
 - 1.2 SET UP SIGNING AND CHANNELIZATION DEVICES AS SHOWN ON PHASE 1A AND SHIFT TRAFFIC. REMOVE TREE AND ISLAND LOCATED BETWEEN STA. 10+20 TO 10+40 +/-, UPON REMOVAL OF ISLAND, PLACE TEMPORARY PAVEMENT IN PORTION OF ISLAND AS SHOWN ON PHASE 1A DETAIL.
 - 1.3 INSTALL ALL CHANNELIZATION DEVICES AND SIGNS AS SHOWN ON PHASE 1B DETAIL AND SHIFT EB ROXBURY ROAD TRAFFIC (FROM NB MD 97) TO TEMPORARY ISLAND PAVEMENT AND SHIFT EB AND WB ROXBURY ROAD TRAFFIC AS SHOWN ON PHASE 1B DETAIL.
 - 1.4 CONSTRUCT ALL IMPROVEMENTS AND GRADING AS SHOWN ON PLANS WITHIN AREA HIGHLIGHTED "WORK ZONE" (EXCEPT FINAL SURFACE PAVEMENT).

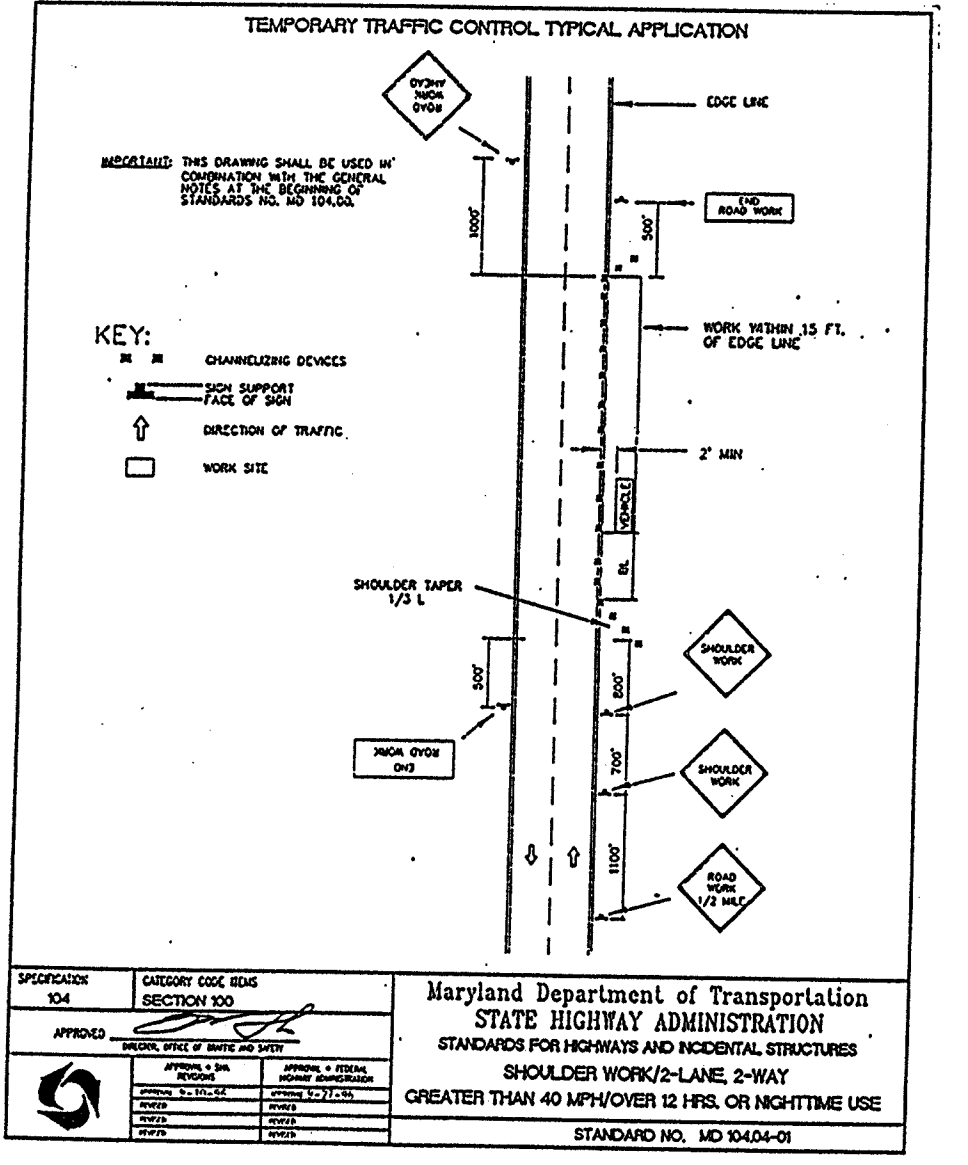
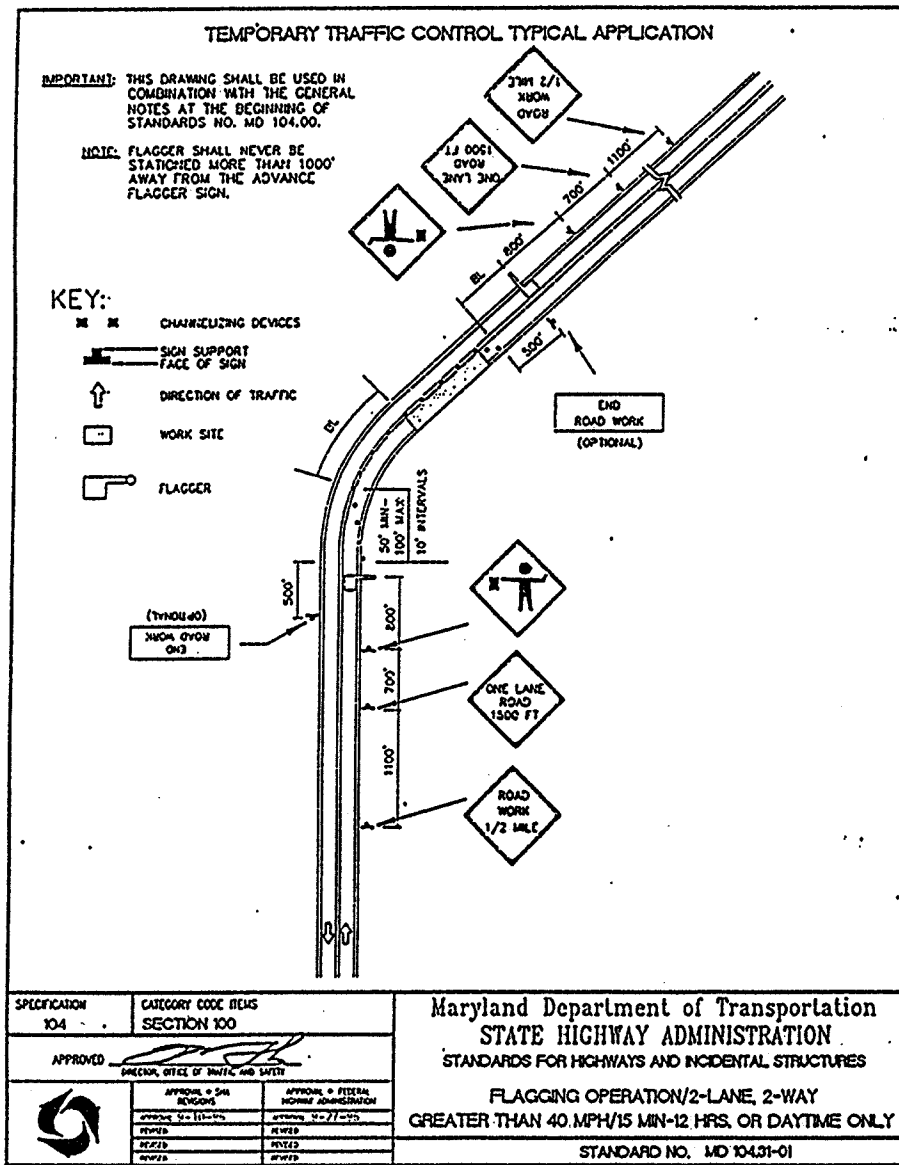
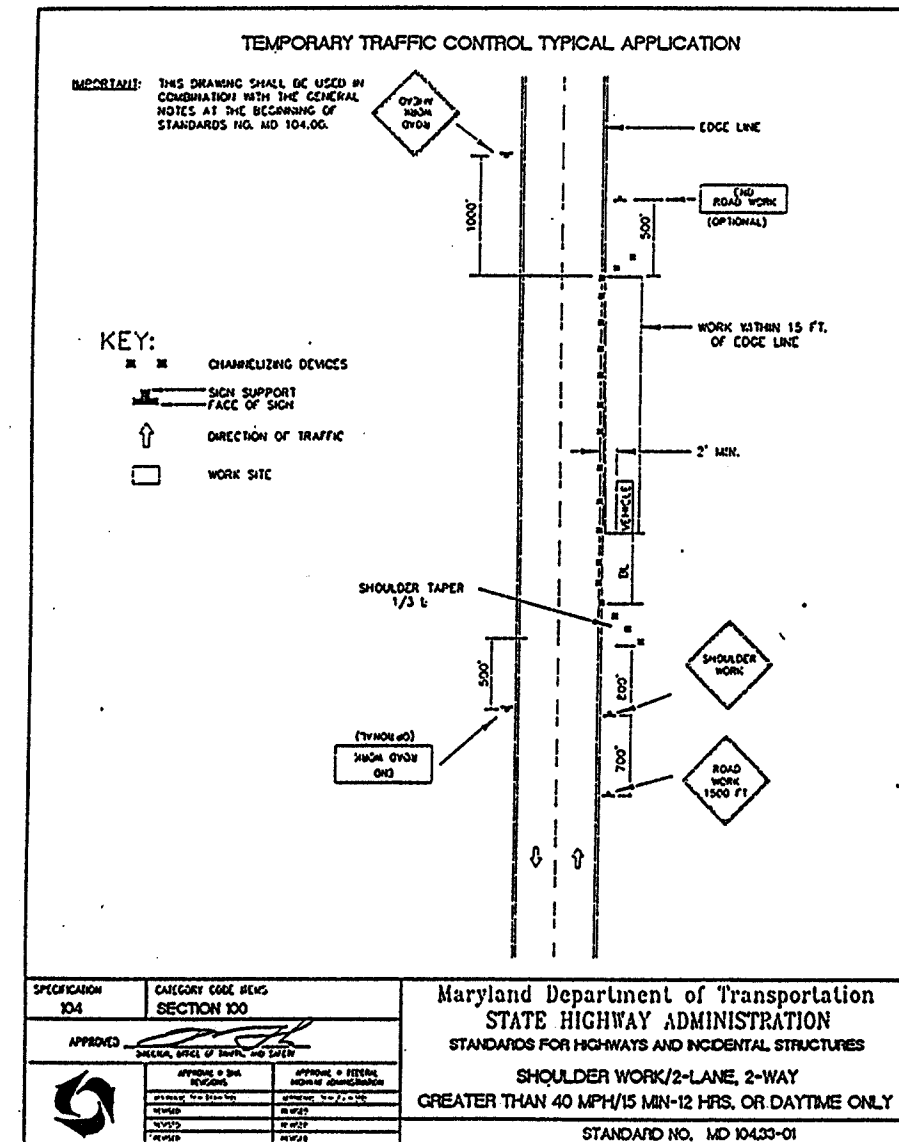


PHASE 1A
SCALE: 1" = 30'



PHASE 1B
SCALE: 1" = 30'

NOTE: MAINTAIN CLEAR ACCESS TO EX. DRIVEWAYS LOCATED WITHIN WORK ZONE.



- LEGEND**
- PROP. TEMPORARY PAVEMENT
 - WORK ZONE
 - CHANNELIZATION DEVICE
 - SIGN WITH SUPPORT
 - TYPE III BARRICADE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

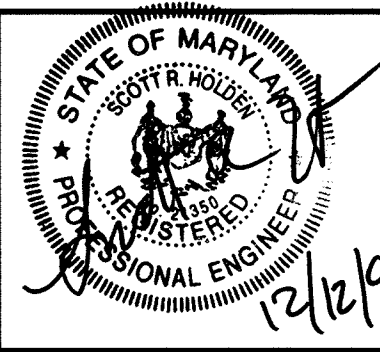
James P. Lewis 1/15/98
CHIEF, BUREAU OF PUBLIC WORKS

Robert J. Sporn 12/15/97
CHIEF, BUREAU OF ENGINEERING

Elizabeth L. Colva 12/15/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

Robert J. Sporn 1-15-98
CHIEF, BUREAU OF HIGHWAYS

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Westminster, Maryland 21158
A/E Job No. 96-309-020



DES: S.R.H.					
DRN: M.J.G.					
CHK: D.P.O.					
DATE: 12/97	BY	NO.	REVISION	DATE	

CAPITAL PROJECT NO.
T-7058/J-4168G

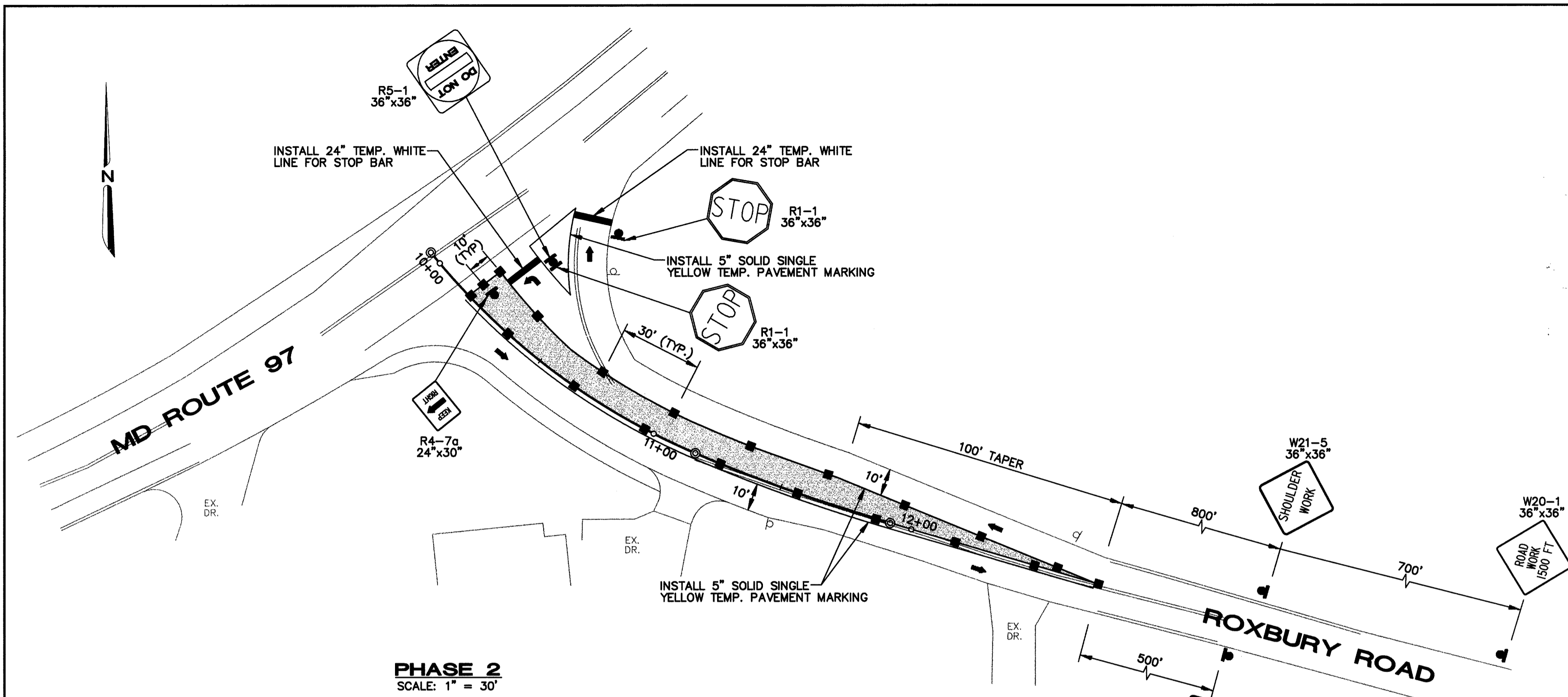
600' SCALE MAP NO. _____ DATE: _____

TRAFFIC CONTROL PLAN SHEET

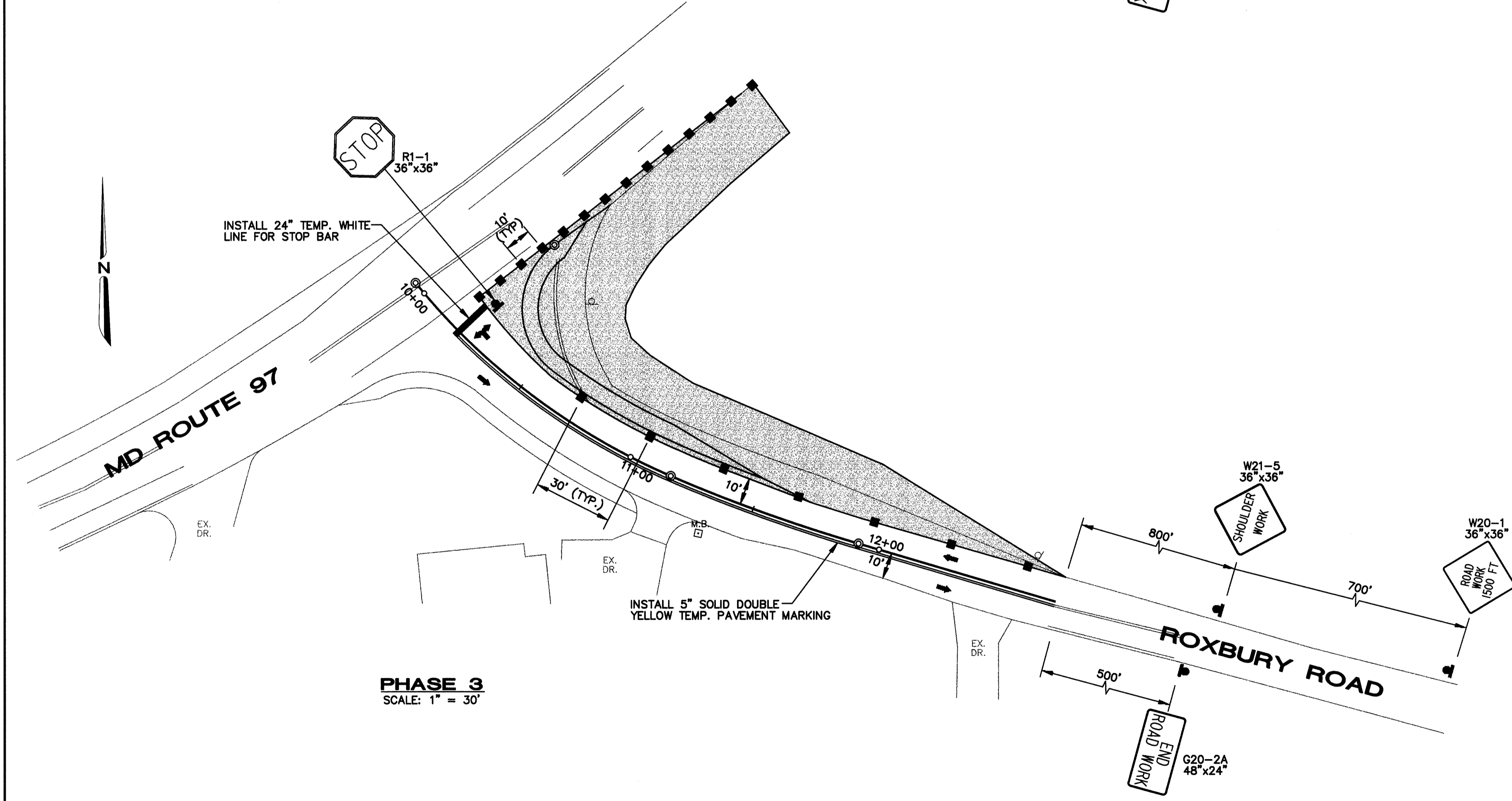
Roxbury Road at Md Route 97

SHEET 6 OF 8

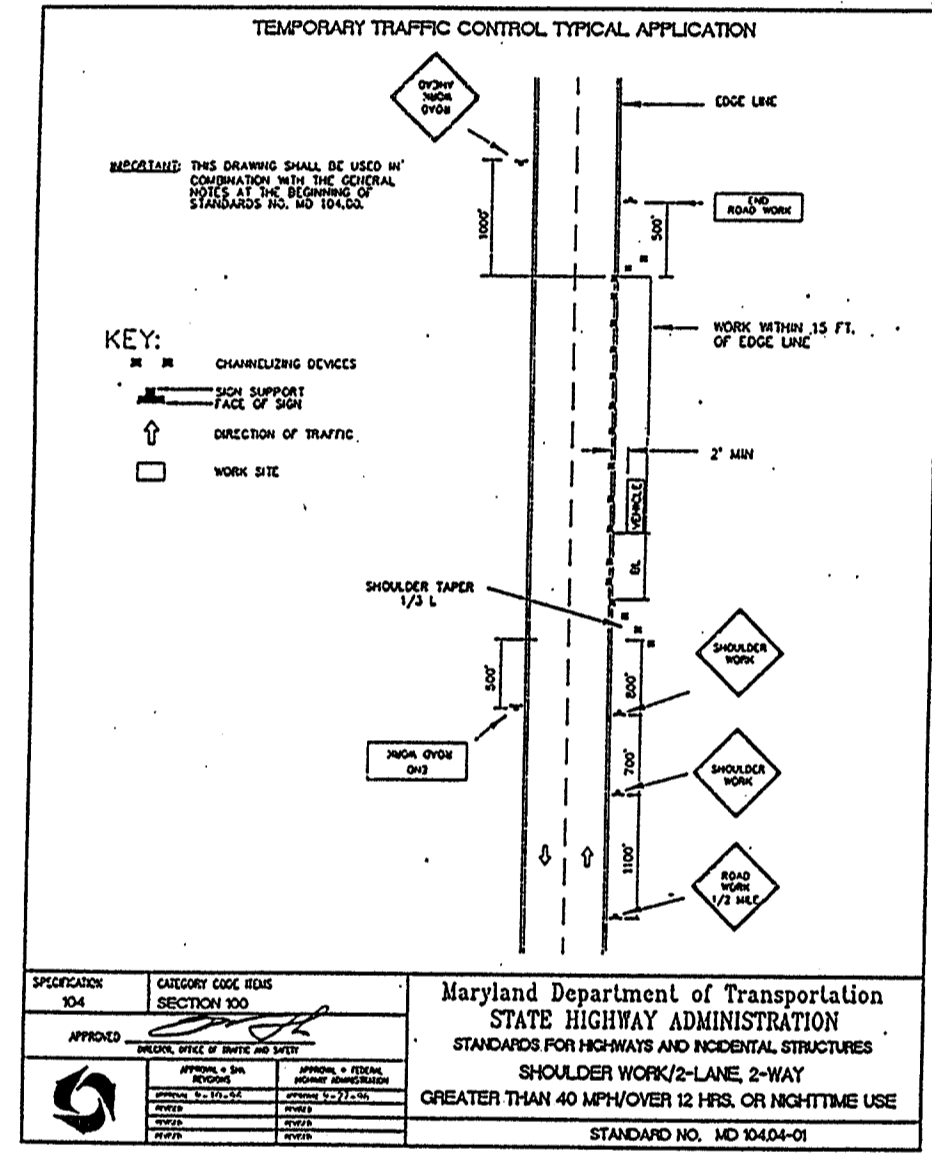
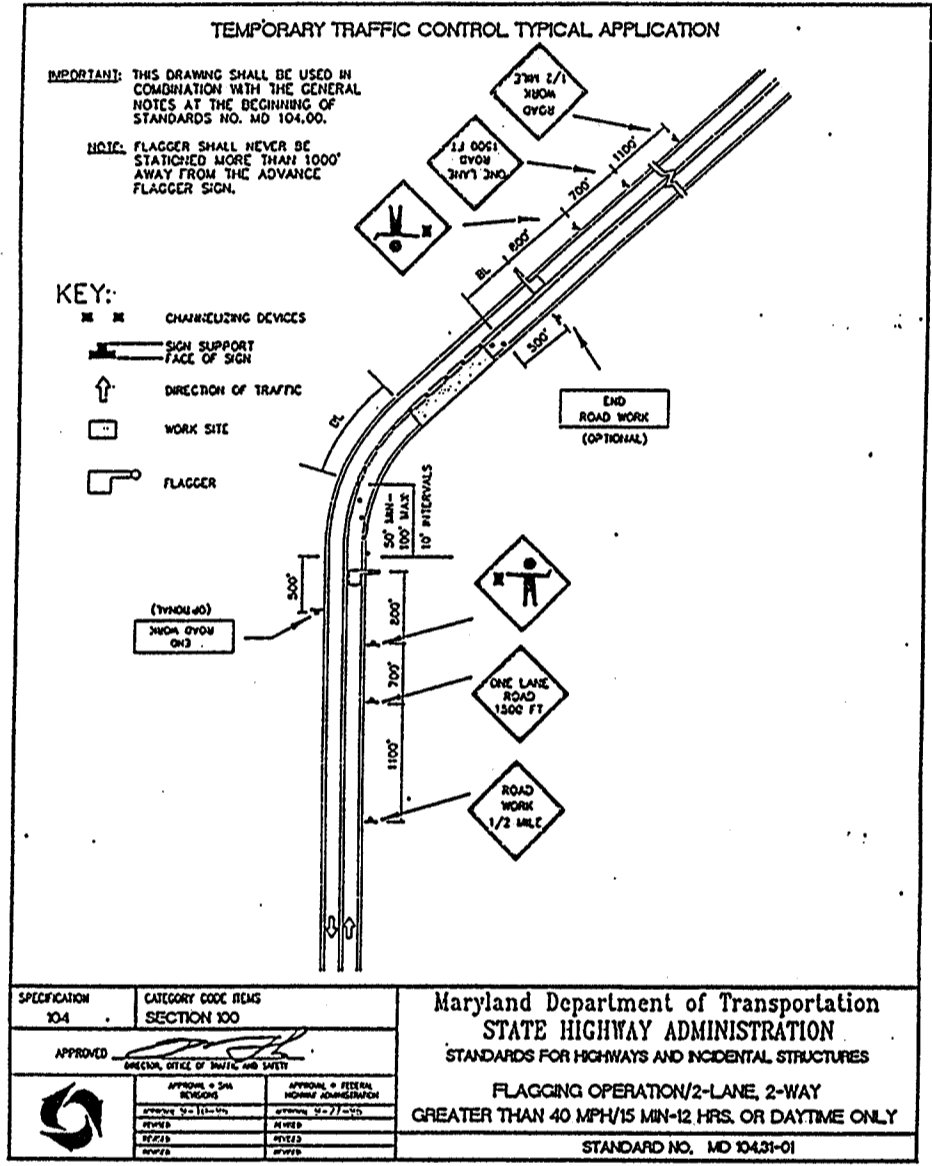
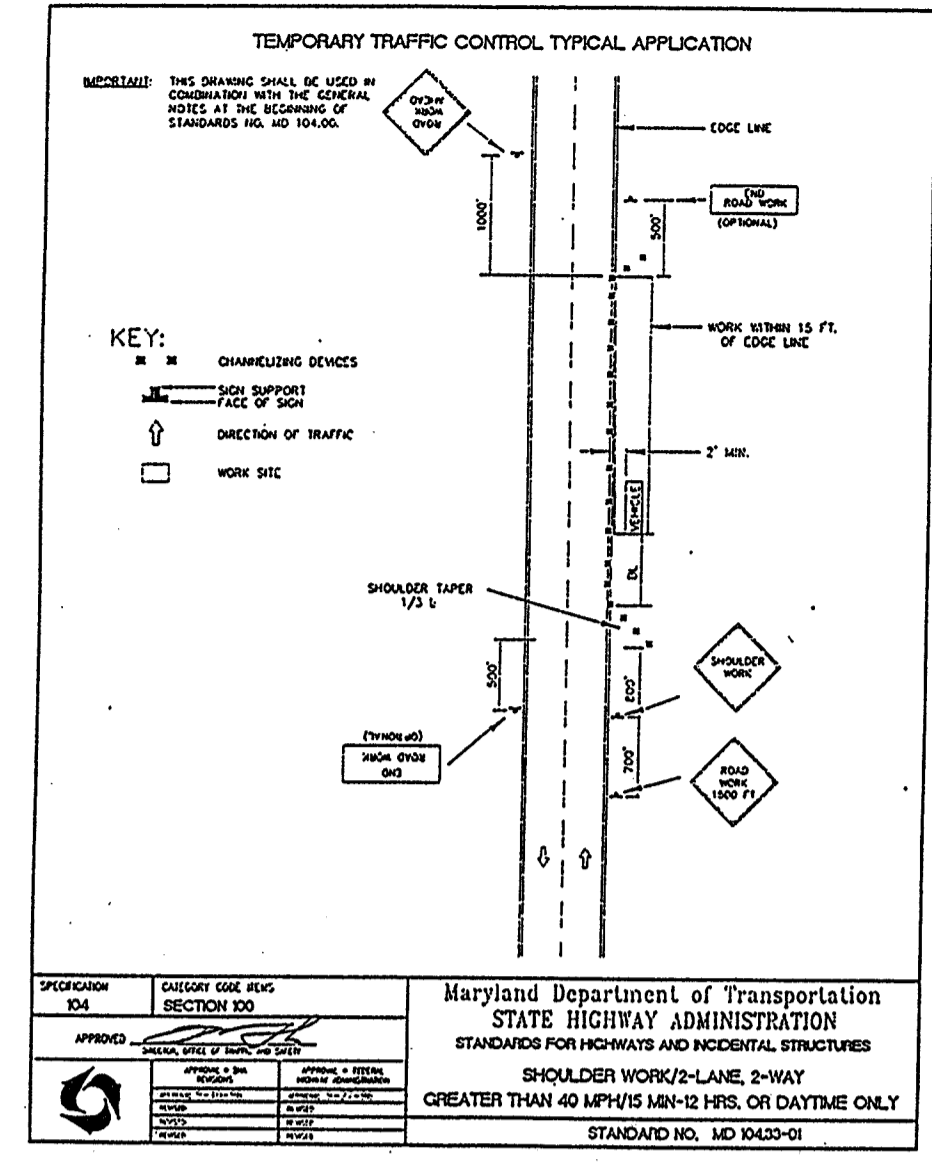
SCALE AS SHOWN



PHASE 2
SCALE: 1" = 30'



PHASE 3
SCALE: 1" = 30'



CONSTRUCTION PHASING

- PHASE 2**
- 2.1 INSTALL ALL CHANNELIZATION DEVICES AND SIGNS AS SHOWN ON PHASE 2 DETAIL AND SHIFT EB ROXBURY ROAD TRAFFIC ON NEWLY CONSTRUCTED PAVEMENT. CLOSE TEMPORARY EB CONNECTION AS SHOWN IN PHASE 2 DETAIL.
 - 2.2 CONSTRUCT ALL IMPROVEMENTS AS SHOWN ON PLANS WITHIN AREA HIGHLIGHTED "WORK ZONE" (EXCEPT FINAL SURFACE PAVEMENT).
- PHASE 3**
- 3.1 INSTALL ALL CHANNELIZATION DEVICES AND SIGNS AS SHOWN ON PHASE 3 DETAIL AND SHIFT WB ROXBURY ROAD TRAFFIC ON NEWLY CONSTRUCTED PAVEMENT.
 - 3.2 CONSTRUCT ALL IMPROVEMENTS AND GRADING AS SHOWN ON PLANS WITHIN AREA HIGHLIGHTED "WORK ZONE" (EXCEPT FINAL SURFACE PAVEMENT).
- PHASE 4**
- 4.1 FINAL SURFACE PAVING SHALL BE COMPLETED UTILIZING CHANNELIZATION AND SIGNING AS SHOWN ON MD STANDARD MD 104.33-01 "SHOULDER WORK /2-LANE, 2-WAY, GREATER THAN 40 MPH / 15 MIN. - 12 HRS. OR DAYTIME ONLY" AS DIRECTED BY HOWARD COUNTY ENGINEER.

LEGEND

- PROP. TEMPORARY PAVEMENT
- WORK ZONE
- CHANNELIZATION DEVICE
- SIGN WITH SUPPORT
- TYPE III BARRICADE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

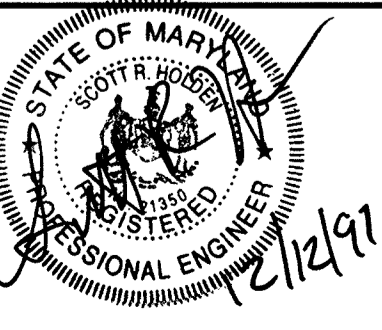
James J. Lee 1/15/98
DEPARTMENT OF PUBLIC WORKS DATE

Rudolf P. Pappas 12/15/97
CHIEF, BUREAU OF ENGINEERING DATE

Carolee A. Colvin 12/15/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Christopher J. Swank 1-15-98
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020

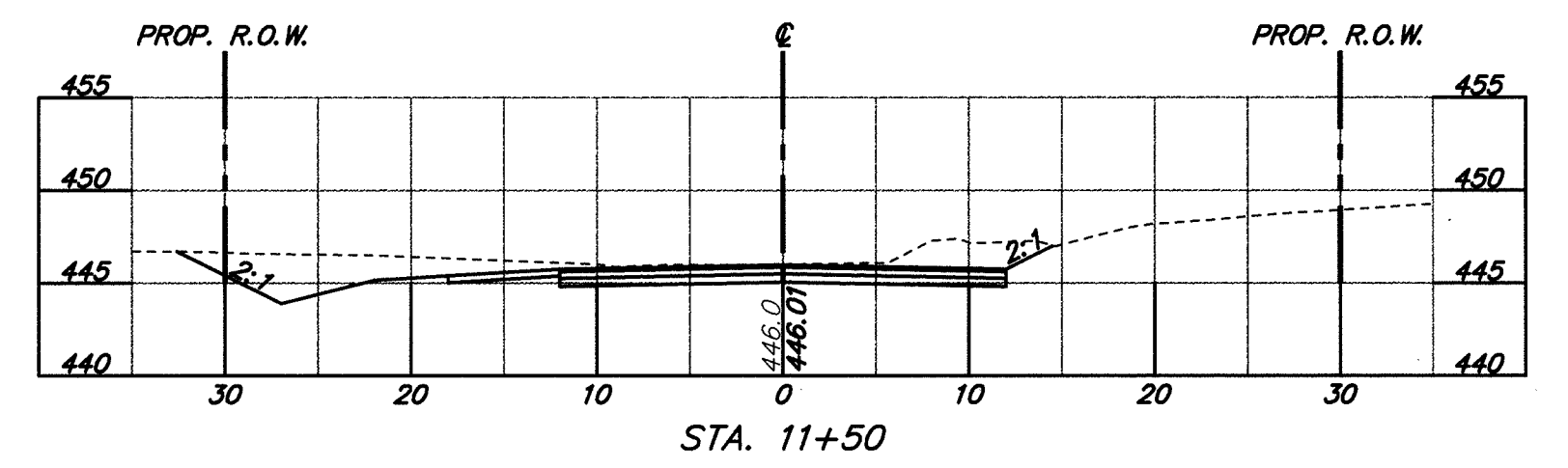
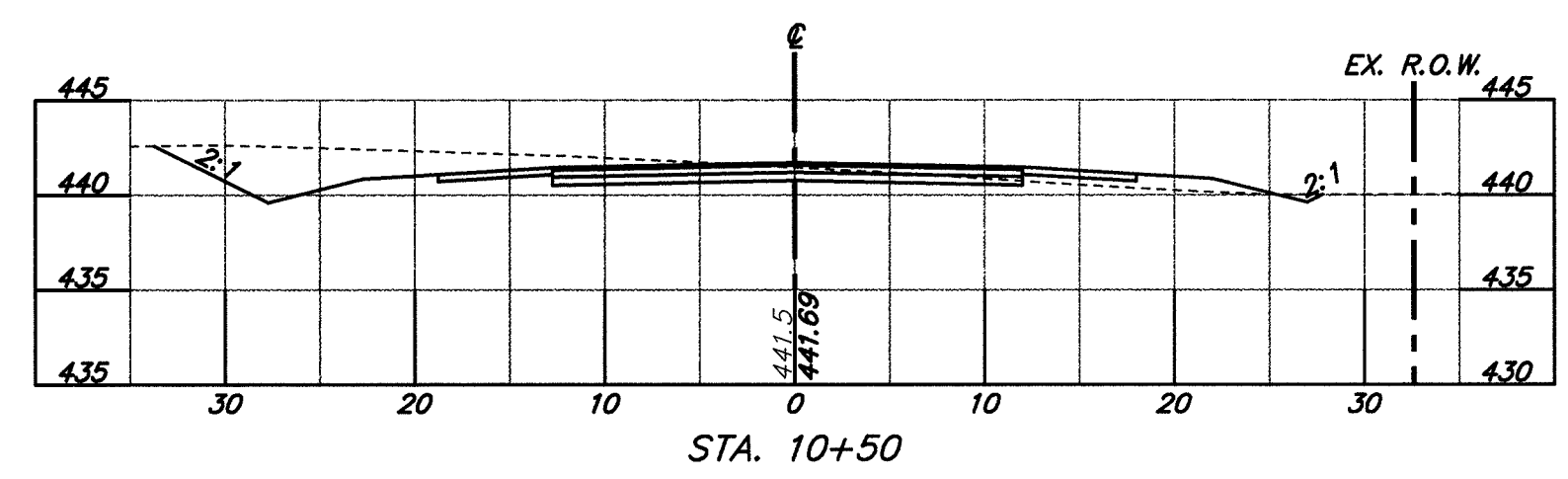
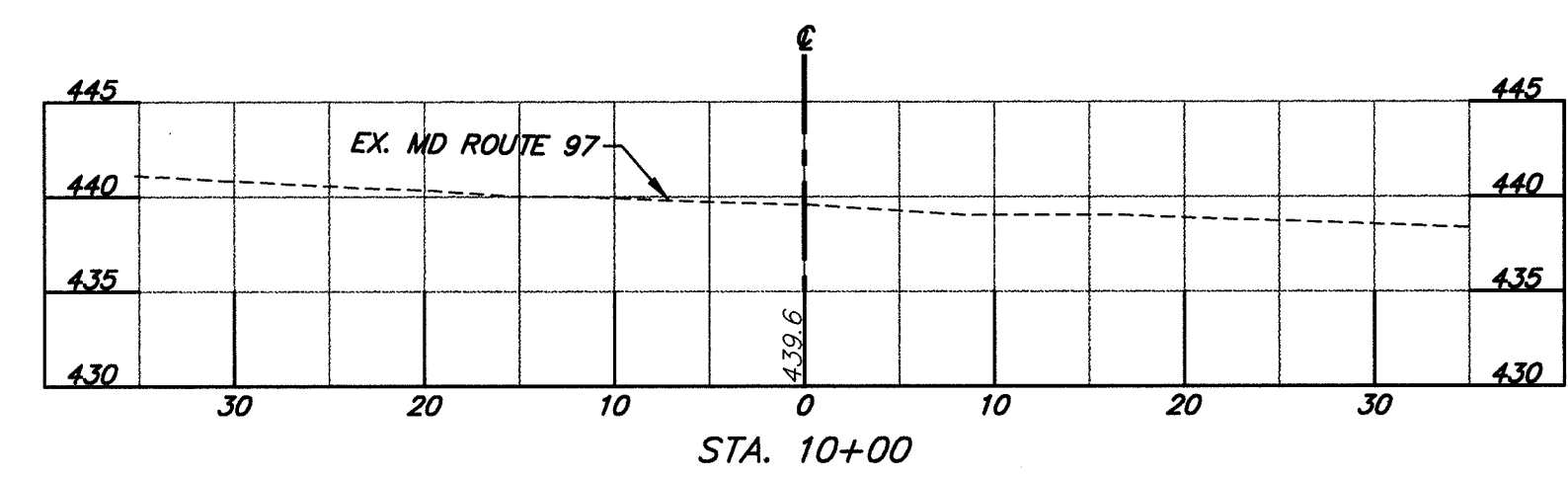
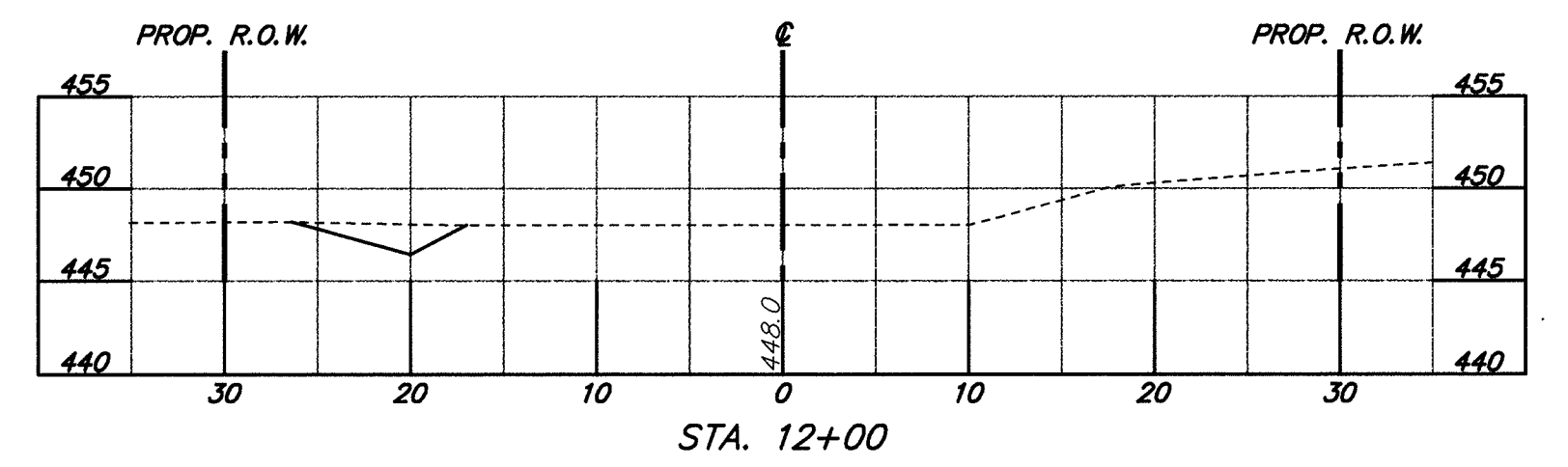
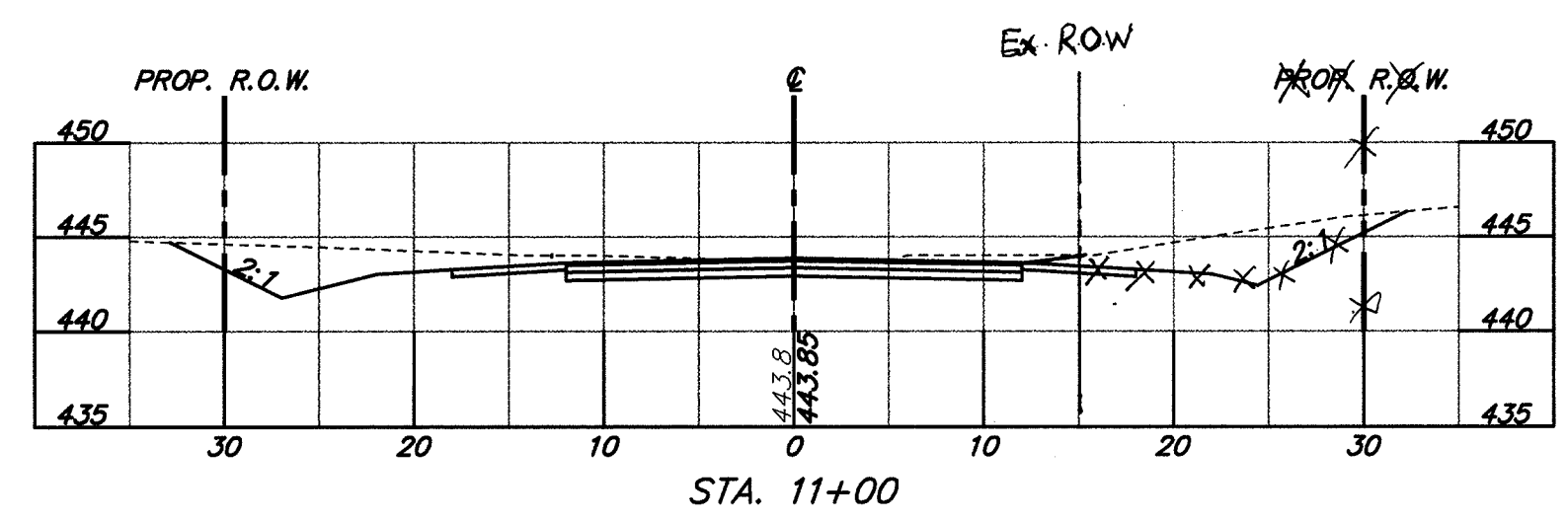
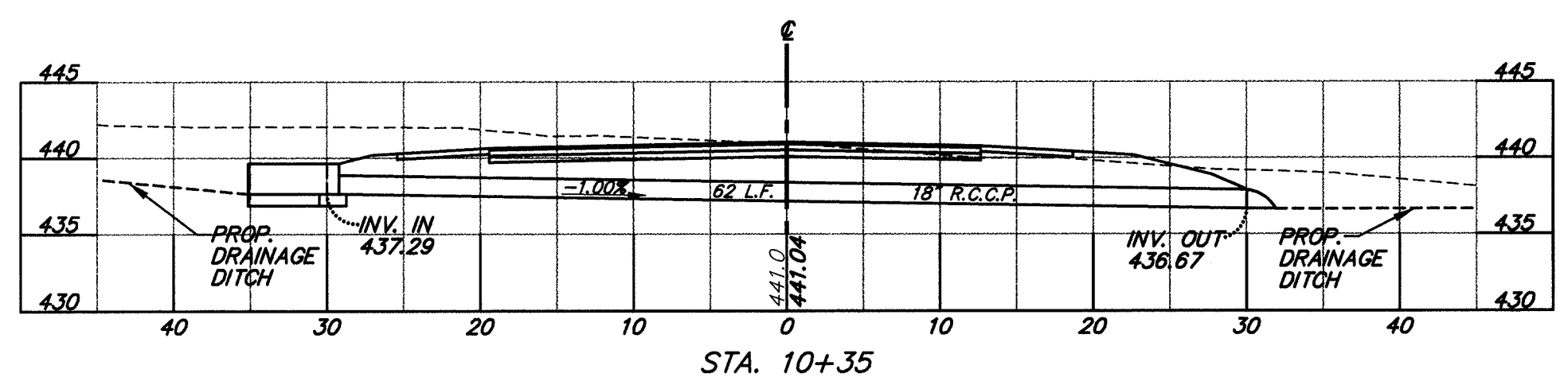


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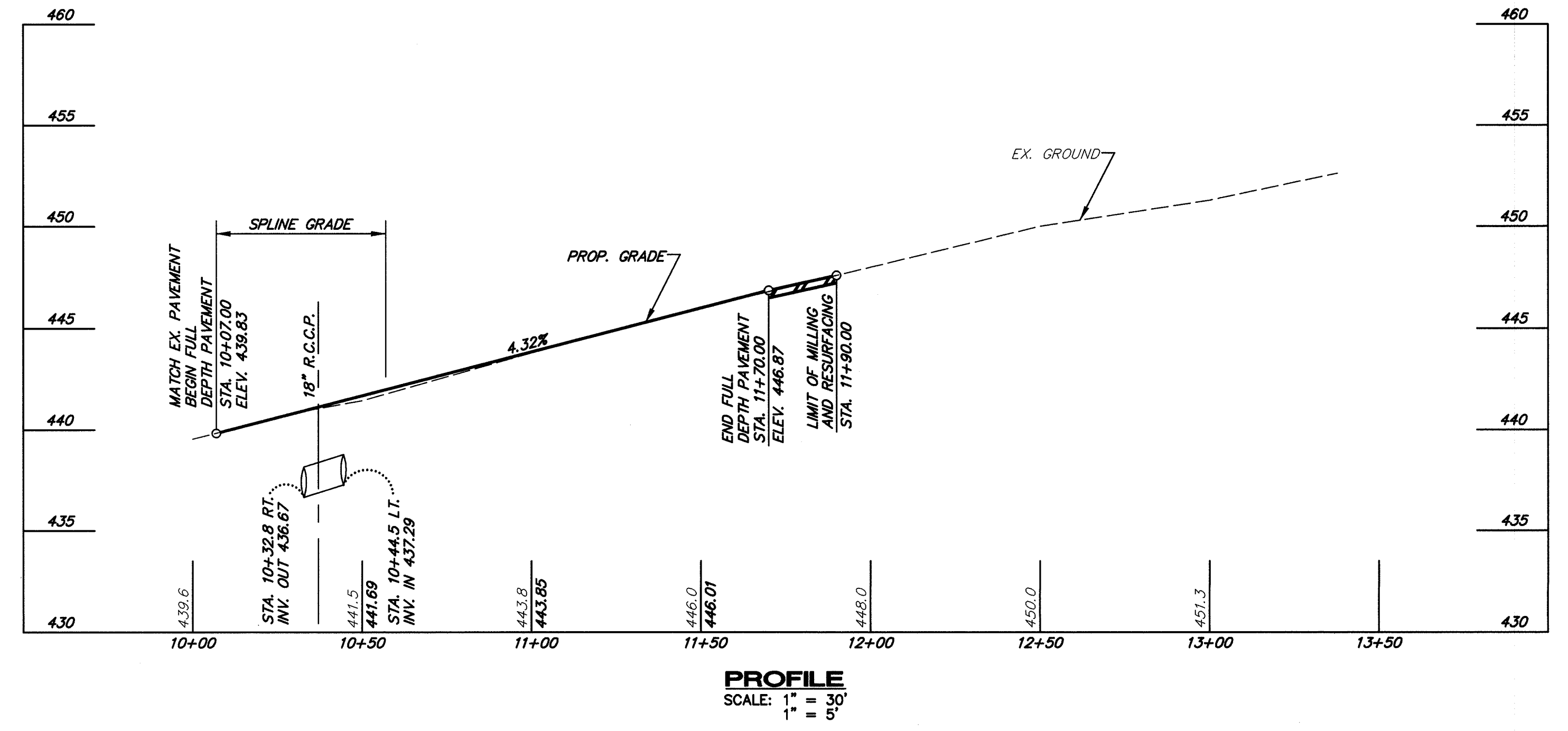
CAPITAL PROJECT NO.
T-7058/J-4168G

TRAFFIC CONTROL PLAN SHEET
**Roxbury Road at
Md Route 97**

SCALE AS SHOWN
SHEET 7 OF 8



CROSS SECTION
SCALE: HORIZ. 1" = 10'
VERT. 1" = 10'



PROFILE
SCALE: 1" = 30'
1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

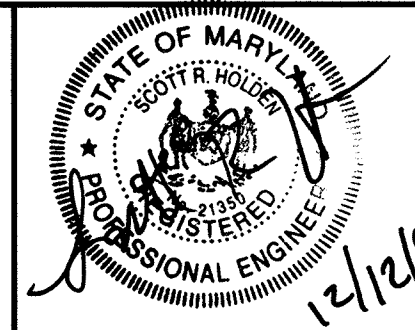
James J. [Signature] 1/15/98
DEPARTMENT OF PUBLIC WORKS DATE

Robert [Signature] 12/15/97
CHIEF, BUREAU OF ENGINEERING DATE

Shirley [Signature] 12/16/97
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Robert [Signature] 12/15/98
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-020



DES: S.R.H.	LPK	Remove shoulder and riprap ditch. Tie back into the slope within existing prescriptive Right-of-way.	11/15/98
DRN: M.J.G.			
CHK: D.P.O.			
DATE: 12/97	BY	NO.	REVISION

CAPITAL PROJECT NO.
T-7058/J-4168G

600' SCALE MAP NO. _____ DATE: _____

PROFILE AND CROSS SECTIONS
**Roxbury Road at
Md Route 97**

SCALE AS SHOWN

SHEET 8 OF 8